PERIODICAL ROOM
GENERAL LIBRARY
UNIV. OF MICH.

APR 17 1924

Vol. XXXIII, 2 Whole No. 194

THE PHILOSOPHICAL REVIEW

EDITED BY

J. E. CREIGHTON

OF THE SAGE SCHOOL OF PHILOSOPHY, CORNELL UNIVERSITY

MARCH, 1924

I. The Intelligible World: Part II ..... WILBUR M. URBAN

II. The Einstein Theory and a Possible Alternative WM. PEPPERELL MONTAGUE

III. Proceedings of the Twenty-third Annual Meeting of the Eastern Division of the American Philosophical Association

IV. REVIEWS OF BOOKS

Julius Schultz, Die Philosophie am Scheidewege: by Frank Thilly—*Ernst Cassirer*, Philosophie der symbolischen Formen. Erster Teil: by W. C. Swabey—Philosophical Essays Presented to John Watson: by L. P. Chambers.

V. NOTICES OF NEW BOOKS

VI. NOTES

PUBLISHED BI-MONTHLY

LONGMANS, GREEN, AND CO.

LANCASTER, PA.

55 FIFTH AVENUE, NEW YORK

SINGLE NUMBERS $1.00 (5s.). PER ANNUM $5.00 (25s.)

THE PHILOSOPHICAL REVIEW

Contents for March, 1924

The Intelligible World: Part II ..... WILBUR M. URBAN 115

The Einstein Theory and a Possible Alternative. WM. PEPPERELL MONTAGUE 143

Proceedings of the Twenty-third Annual Meeting of the Eastern Division of the American Philosophical Association 171

Reviews of Books 189

Julius Schultz, Die Philosophie am Scheidewege. Die Antinomie im Werten und Denken: by Frank Thilly—*Ernst Cassirer*, Philosophie der symbolischen Formen. Erster Teil: by W. C. Swabey—Philosophical Essays Presented to John Watson: by L. P. Chambers.

Notices of New Books 208

R. F. Alfred Hoernlé, Matter, Life, Mind and God: by G. Watts Cunningham—*Gustav Kafka*, Die Vorsokratiker; Sokrates, Platon und der sokratische Kreis: by G. S. Brett—*Nicholas Malebranche*, Dialogues on Metaphysics and on Religion (trans. by Morris Ginsberg): by W. C. Swabey—*Alessandro Chiappelli*, La crisi del pensiero moderno: by Wm. Kelley Wright—*Lucien Lévy-Bruhl*, Primitive Mentality (trans. by Lilian A. Clare): by Wm. Kelley Wright—*James Clark McKerrow*, The Appearance of Mind: by Flora I. MacKinnon—*Joseph Bernhart*, Die philosophische Mystik des Mittelalters: by H. N. Gardiner—*Bernhard Jansen*, Leibniz, erkenntnistheoretischer Realist: by H. R. Smart—*Robert Reininger*, Kant: seine Anhänger und seine Gegner: by Frank Thilly—*C. K. Ogden* and *I. A. Richards*, The Meaning of Meaning: by W. C. Swabey.

Notes 225

Articles intended for publication, books for review, exchanges, and all correspondence in reference thereto, should be addressed to **Professor J. E. Creighton, The Philosophical Review, Cornell University, Ithaca, N. Y.**

LONGMANS, GREEN, AND CO.

Prince and Lemon Streets, Lancaster, Pa.

55 Fifth Ave., New York City.

Entered in the post-office at Lancaster, Pa., as second-class matter

Number 2. *Whole*
Volume XXXIII. *March, 1924* *Number 193.*

THE PHILOSOPHICAL REVIEW.

THE INTELLIGIBLE WORLD.

PART II: THE FORM OF PHILOSOPHICAL INTELLIGIBILITY.[1]

AN intelligible world, a *mundus intelligibilis*, we have said in an earlier paper, is the world in which the masters of human thought have lived and moved and had their being. Their 'grandiose and primitive schemes' may not, indeed, meet the more complicated problems of modern times, but there remains something in them that is irrefutable, something to which the mind returns again and again, as it returns to the simplicity and lucidity of the greatest works of art.

"Surely," says Aristotle in his *Metaphysics*,[2] "it is not likely that fire or earth or any such element should be the reason why things manifest goodness and beauty both in their being and their

[1] I am indebted for this expression, as indeed for much of the impulse to write on this subject, to the valuable paper by Professor J. E. Creighton, under the same title, and published in the PHILOSOPHICAL REVIEW for May, 1923. For Professor Creighton, the form of philosophical intelligibility is "that of a concrete universal which expresses the inwardness and essence of individuals through a grasp of their constitutive relations." The very real sympathy of my own view with that of Professor Creighton has already been made clear in the preceding paper. For me also "the key to all sound philosophy lies in taking the concrete universal as the true type of universality." The expressive and intelligible concepts of philosophy may properly be so described. But by the form of philosophical intelligibility, as I shall use it in this paper, something more is meant. It is rather a certain structure or system of thought that necessarily emerges when we retain these expressive concepts in communication and interpretation. All this will become clear as the paper progresses. It seems desirable, however, to emphasize this difference at the start, more particularly for the reason that certain forms of modern idealism have shown little sympathy for the very form of thought I propose to develop.

[2] 984b11-22.

coming to be, or that those thinkers should have supposed it was; nor again could it be right to ascribe so great a matter to spontaneity and luck. When one man declared then that reason was present—as in animals so throughout nature—being the cause of the world and all its order, he seemed like a sober man in contrast with the random talk of his predecessors. . . . Those who thought thus stated that there is a principle of things which is at the same time the cause of beauty and that sort of cause from which things acquire movement." More than two thousand years have passed since Aristotle said this, and we may well ask with Lord Haldane, "whether we have really got beyond Aristotle in our philosophical outlook." It would indeed be too much to expect that so exquisitely simple a statement should wholly satisfy the demands of the sophisticated modern mind. The terms 'cause' and 'reason' have become so mouthed by criticism that they have lost their 'original and living significance.' 'Spontaneity' and 'luck' have been so camouflaged in modern naturalisms that we have lost the sense of their unintelligibility. It is all really a question that concerns not the quantity, but the *quality* of our modern knowledge. In so far as the latter is concerned, modern thought, it can scarcely be denied, leaves much to be desired. Everywhere an exuberance of intellectual activity and subtlety, but our wealth covers a profound poverty, our sophistication an essential unintelligibility. On the other hand, there remains something in the insights of the great philosophers to which we return as to the beauty and lucidity of the greatest works of art.

We may now see, I think, wherein the essential intelligibility of traditional philosophy is to be found. The insights of the great thinkers remain perennially significant for us because in general they fulfill the conditions of philosophical intelligibility. Consciously or unconsciously, they acknowledge those postulates and presuppositions, that *Moral des Denkens* without which intelligible communication and interpretation are impossible. More particularly in all their descriptions, explanations and interpretations, they retain the meaning and value of things. The one thing that they all understand is the difference between explaining things and explaining them away.

This much is obvious to any one who has lived himself into those ways of thought that we call classical. But it is also very general. The question naturally arises whether this philosophical intelligibility does not involve something more, whether retention of the meaning and values of terms, the keeping of the fundamental categories of interpretation, does not imply also some specific *structural form*—whether, in short, there is not some natural metaphysic of the human mind which generates a form of thought innate in intelligibility as such? Whether, finally, violation of this form does not result in essential unintelligibility?

To this question our answer must be, I think, in the affirmative. All world views that are intelligible have a specific form which is *a priori* in the sense that it develops necessarily out of the attempt to interpret and express adequately in the form of reflection the meaning and experiences of life. The form of an intelligible world is determined directly by the conditions of intelligible communication and interpretation. The mere fact of the existence of such a form, of a *philosophia perennis* which, despite the controversies of the sects, remains relatively constant, is, I think, one of the most certain facts of human thought. It is our task now to develop that form and to show its validity.

I.

There is, as Bergson has made clear to us, "a natural metaphysic of the human mind," a form of reflection in which alone the world seems to us to be made intelligible. To him at least it seems clear that it is a form to which every one will come if he follows the intellect to its natural conclusion. His greatest service to philosophy, perhaps, as I have indicated elsewhere,[1] is the cogency with which he has made the alternative clear—between following out that natural metaphysic of the intellect, or turning our backs upon it and renouncing intelligibility for intuition. Let us look first at this natural form.

The starting point of this natural metaphysic is the riddle of life, the burden of this unintelligible world, the problem alike of the highest poetry and the deepest philosophy. The similarities

[1] "Origin and Value," PHILOSOPHICAL REVIEW, September, 1923.

between philosophy and meditative poetry, so interestingly worked out by Dilthey, arise from their common starting point and the form which it necessarily generates. In both the apprehension of objects in the life process, the gross and visible frame of things, forms the basis for reactions upon these objects, for distinctions between appearance and reality, the changing and the permanent, and ultimately between the true and false, the worthy and the worthless in the world in which our life is lived. For the gross and visible frame each seeks a finer and more invisible. Both seek an intelligible world, although in different ways. But when, as in the case of the philosopher, a complete solution of the riddle is sought, reflection predominates over emotion, expression is taken up into system, and the natural metaphysic assumes a logical structure and form.

This natural metaphysic is, I repeat, present alike in the highest poetry and the deepest philosophy. Their common problem dictates a common form. It finds significant expression, for example, in Matthew Arnold's lyric, *The Buried Life:*

> "But often in the world's most crowded streets,
> But often in the din of strife,
> There rises an unspeakable desire
> After the knowledge of our buried life."

Thus the 'metaphysical instinct'; then sometimes, 'but this is rare,'

> "A man becomes aware of his life's flow. . . .
> An air of coolness plays upon his face
> And an unwonted calm pervades his breast
> And then he thinks he knows
> The hills whence his life rose
> And the sea where it goes."

Perhaps he only thinks he knows, but unless he knows, his life and the world in which that life appears remain wholly unintelligible.

The essential form of metaphysical knowledge appears in these last lines; origin and destiny have always been necessary parts of the form of philosophic intelligibility. All questions of life revolve around the problems of generation, development and death, of beginning and end. Life is unintelligible unless expressed in these concepts and the form of reflection they generate. Without

them, without this *life-form*, the meaning of life is unrealizable and incommunicable. We can not think of life except as a center of values, except as a movement towards the good. No intelligibility without finality. But it is equally true that we can not think finality without origin. Origin and destiny are the same thing seen from two different points of view. The essence and meaning of a thing involve both. To penetrate to, or comprehend the meaning of life is impossible without these concepts. Intrinsic intelligibility involves this form.

But this is only the beginning of the natural metaphysic of the human mind. To bring the ends of the life process together is the condition of its intelligibility. But the life process is part of a larger context, and to make life itself intelligible the form of reflection must be extended to the cosmos as a whole. No intelligible theory of our own existence is possible that divorces it from this larger context; that divorces our duration from the context of eternity, our place in the cosmos from its infinity, man from his context in the totality of things. But can we make this larger context intelligible? Can we bring the ends of the world together?

This is the problem that life itself sets. It is also the problem that generates all the significant and difficult questions of philosophy—the technical problems of space and time, of causality and finality, of philosophical system itself. It may be that the world is not penetrable, not comprehensible. It may be that the ends of the world can not be brought together, that all attempts to bring them together, as in the speculative insights of the great systems, are but 'rationalizations.' None the less must they be brought together if there is to be any intelligibility in the philosophical sense.

In any case, we have here, as Bergson says, the 'natural metaphysic of the human mind,' that to which every one will come if he follows the intellect to its natural conclusion. Thus it is, as he continues, that the identification of efficient and final cause is not only the last word of Greek philosophy, but together with the concept of being it implies the essence of the traditional form of intelligibility. We perceive God or Idea or Spirit as efficient or final cause according to the point of view, and it is this insight

that alone makes the world intelligible for reflection. It is for this reason that an irresistible attraction continually brings the intellect back to its natural movement and brings the metaphysics of the moderns continually to the conclusions of the Greeks.

It is not our object at this point to determine whether this form of intelligibility, as worked out first by the Greek genius, is final. Many statements of it have been, if not actually refuted, at least surpassed in various ways. The point to be insisted upon here is rather this: that it represents the natural and inherent movement of thought as such. In so far it contains an element that is irrefutable. Reconstruction, reinterpretation of this form may be necessary, but to turn our backs upon it means that our thought must ultimately become unintelligible.

II.

The nature and conditions of philosophical intelligibility constituted the theme of the preceding paper. The results of that discussion may be summarized briefly as follows: The ideal of intelligibility and of an intelligible world includes two distinct but closely related elements. On the one hand there is the ideal of an intelligible world or order in which a life of meaning and significance can be lived. On the other hand there is the ideal of intelligible concepts, of forms of reflection, in terms of which this world can be adequately apprehended and expressed. It was the second problem that chiefly engaged our attention, for the reason that the first is ultimately reducible to the second.

The detail of that argument can not be repeated here. It must suffice to recall the main points. All intelligibility ultimately goes back to intrinsic intelligibles. The only thing that is intrinsically intelligible, however, is a will oriented towards values. Intelligibility in its lowest and simplest form already presupposes communication, and communication presupposes acknowledgment of identical meanings and the values which these meanings presuppose. There is no type of meaning separable from value. The conditions of intelligibility are the conditions of intelligible communication, and the conditions of intelligible communication are

the acknowledgment and retention of the meanings and values of things. To separate reality and value means unintelligibility.[1]

Philosophies, we accordingly said, are known by the categories they keep. The first and last condition of truly philosophical concepts is their expressiveness; lacking this, they in a sense lack all. The condition of intelligible communication and interpretation is the retention of the meaning, the value and the *reality* of the things to be explained and interpreted. It is unnecessary to recall here the ways in which these conditions of intelligibility are violated, how the mania for reduction, for calling things other than they are, has led to the abandonment of categories of description and interpretation without which intelligible communication is impossible. It is equally unnecessary to recall the significance of the "concrete universal" as a logical formula for these expressive concepts, or our arguments to the effect that such concepts are genuine simples, as against the charge of logical atomism which thinks to find in these concepts the fallacy of pseudo-simplicity. Let us recall rather here the kinds of concepts or categories that a philosophy must keep if it is to be intelligible.

In our discussion of philosophical intelligibility and philosophical concepts we distinguished two classes of such concepts. On the one hand there are those which correspond to organic wholes, such as life, personality, the state; and on the other hand those deeper-lying categories, such as substance, cause, purpose, without which the interpretation of these organic wholes is impossible. So

[1] The basal character of communication in philosophy is also emphasized by C. Delisle Burns in his recent book, *The Contact Between Minds*. "Communication, then, which somehow rests upon meaning, is a kind of reality which is ultimate within the world of minds: and, as a relation between minds, cannot be reduced to or entirely explained by the terms of that relation, for the relation is not its terms and the terms are not their relation" (p. 73). Mr. Burns recognizes that awareness of values is bound up with communication and contact of minds and that it is in the mutual enjoyment of values that we apprehend the reality of other minds. He recognizes that values "are not distinguished from other realities by the actual contact of minds in the perception of them: for this contact is universal and necessary in all mental activity" (p. 97). Even perception has no meaning without communication. Yet for some reason he fails to see that the distinctions between existence and non-existence, reality and unreality, themselves also arise in and presuppose this communication. He insists upon a pure contemplation of existence apart from communication and thus preserves a brute realism at the cost of an unintelligible dualism.

far as the wholes themselves are concerned, our contention was that the meaning and value of the whole is greater than the meaning and value of the sum of the parts, and since this value and meaning is inseparable from the reality of the whole, it must be retained in any concepts which shall adequately describe and interpret it. This is the first condition of expressive concepts and the beginning of philosophical intelligibility. But it is only the beginning.

Description is but the first step to explanation and interpretation. Things must be conceptually described, genetically explained and axiologically interpreted. Description passes insensibly into explanation and explanation into interpretation. Their separation is a product of that subtlety and sophistication which in modern thought has found expression in the unintelligible statement that science seeks to 'know,' not to 'understand.' No description is intelligible which does not retain the meaning and value of the thing described—as part of its reality. No explanation really explains which in essence amounts to explaining away the meaning and value of the thing explained. All explanation, if it is to be ultimately intelligible, must eventuate in axiological interpretation, for it is only in this 'higher intelligibility' that any genuine understanding, intrinsic intelligibility, is found.

One has merely to realize the implications of these statements to see that a further step in our thinking is involved. To keep intact the categories of intelligible description, these expressive concepts, *involves keeping intact also the categories of explanation and interpretation, the categories of cause and purpose, of substance and essence.* They are interpretative, as well as descriptive and explanatory in the narrower sense. Retention of their intrinsic intelligibility, their value connotation, is part also of the conditions of intelligible communication.

With such a conclusion, if it is justified, we should be led back, it is immediately apparent, to the natural metaphysic of the human mind, to that form of philosophical intelligibility which emerged in all the freshness and lucidity of Greek thought, and to which the mind, unless it renounces intelligibility completely, must in one way or another constantly return.[1]

[1] Since the development of the main points of this paper, C. Lloyd Morgan's

III.

The vigor and intelligibility of traditional thought is due in large measure to its retention of the natural metaphysic of the human mind and therefore to the retention, in all their full-blooded meaning, of the fundamental categories of substance, cause, purpose, which belong to that metaphysic. Yet one of the results of 'the modern application of Occam's razor' is, as one of the most sophisticated of the moderns has said, precisely to leave philosophy shorn of these very concepts without which intelligible communication is impossible. They too are classed by the radical analyst as *pseudo-simples,* and with their banishment disappears both the demand for any real intelligibility and the form in which that demand has been satisfied.

There is little doubt, I think, that these fundamental forms of human thought have become, as Lossky says, largely lifeless and meaningless. He is speaking of precisely these categories—of substance, cause and purpose, which form the basis of intelligible communication and interpretation. "The every-day consciousness," he says, "understands by them something living and real," something which has in it "no merely intellectual significance." By substance, for instance, is understood the ultimate core of being, the independent individuality; by casuality we understand activity, expenditure of energy. When critical thought gets through with these concepts no trace of their original living significance remains.

It is entirely natural that logical atomism should be ready to give to these dead or dying concepts their *coup de grâce.* They

Emergent Evolution, 1923, has come into my hands, a book that confirms the main contentions of my argument to an astonishing degree. He also makes basal the principle of acknowledgement of meanings and values as the condition of real intelligibility. He also accepts the pseudo-simples of the pure analyst with what he calls "natural piety," that same natural piety, I suppose, which, according to the poet, "links each to each" in mutual acknowledgment of values. But the point I wish to emphasize here is that this very natural piety he professes also leads him back to the natural metaphysic it implies. He also acknowledges a "divine" and "directive activity" as "omnipresent and manifested in all entities"; in short an "intelligible causality" which brings efficient and final cause together. Whether such a metaphysic is really compatible with a doctrine of emergents, as more than a merely descriptive formula, we may leave undetermined.

can not be reduced to logical simples; why not abandon them entirely for the pseudo-simples they are? The categories, of substance, quality, relation, represent natural stages in the evolution of thought; why not abandon the earlier stages entirely in favor of the last? This is a favorite line of thought with those who have renounced 'understanding' for mere 'knowing.' Following it, they can get rid of all the concrete realities which stand in the way of complete reduction to the simplicity and continuity of science. Beneath this line of thought, however, there is an assumption which, of course, begs the whole question at issue. For it does not follow that the 'improvement of thought' for certain purposes involves necessarily the abandonment of earlier concepts, any more than, for instance, the development of language demands the displacement of gesture or any other non-verbal means of communication out of which language arose. "Does any one really think," asks Maeterlinck, "that by means of mere words any real communication can pass from man to man?" Does any one really think that by means of words from which all intrinsic intelligibility has been banished, in which the only difference is that for unusual usual unintelligibility has been substituted, any real communication can take place? Who is still naïve enough to think that concepts that merely give control of phenomena necessarily give their meaning also?

The point here is that the situation is really quite the contrary. The development of 'scientific' concepts, far from displacing the more primitive concepts, only shows them to be the more indispensable. The universals of science, it is generally admitted, are nothing more than possibilities of describing things, the utility of which depends largely, if not solely, upon the ease with which they allow the facts to be assimilated to them. Such are the great scientific universals, such as inertia, mass, element, atom, energy, etc., in the case of which the one question is the degree to which they enable us to achieve the simplicity, unity and continuity which constitute the ideal of scientific intelligibility. But such a world, as we have seen, is not necessarily intelligible. Not only is it impenetrable and incomprehensible; it is, above all, not a world in which an intelligible life can be lived. Absolute physics is, as

Nietzsche said, intolerable. It is intolerable, however, really because it is ultimately unintelligible.

The banishment of these deeper-lying categories means, we have said, the loss both of the *primary* intelligibility of the every-day consciousness and the higher intelligibility called philosophical. The primary intelligibility of these categories has been ascribed to their animistic origin and their practical character. Neither of these characterizations is wholly untrue. Their original and living significance lies partly in the fact that they are human and practical. The concepts of substance and attribute, permanence and change, enable us to control things practically when we are innocent of science. The concepts of cause and purpose may convey practical meaning where the more refined concepts of science fail. But while they are more human and practical than their scientific substitutes, they are also more metaphysical. To these categories all philosophical reflection and interpretation ultimately return. Only in terms of substance or essence as the ultimate core of being, of causality as efficient and final activity, of restless becoming and self-contained being—only in such terms can the mind apprehend and communicate the meaning of its own life, and with it the meaning of the world in which that life is lived. In fine, the language of metaphysics must contain these expressive concepts if it is to be intelligible and it must retain them in their vigorous and full-blooded meaning. Much of modern philosophy has been talking 'weasel words,' from which all genuine meaning has been sucked.

Speculative and logical difficulties enough cluster about these notions which, in a sense perhaps, are not necessary for science in the narrow and sophisticated sense of that word. The fact that they are part of the necessary form of an intelligible world does not, of course, dispense the philosopher from making these concepts themselves intelligible. One form of modern thinking, we have seen, believes that they can not be made intelligible because they can not be reduced to logical simples, and would therefore banish them entirely from scientific discourse. A second type would give them only a practical significance, and if there be any other meaning in reality find it in immediate intuition. But there

is still a third type of criticism exercised upon these categories which, to my mind, is ultimately equally disastrous to philosophical intelligibility. Certain forms of Idealism, if they would not actually banish them, would at least so transform them that they thereby also lose their original and living significance and cease to be the media of intelligible communication and interpretation. On the assumption that only the *one* individual is really intelligible, and that "the harmonious organization of reality that constitutes that individual is *just* and *only* what we mean by meaning and value," these interpretative categories are reduced to appearance and illusion and the form of an intelligible world falls apart. This is not the place to enter into the details of these criticisms, nor yet to do more than to indicate how, on the basis of the principles of this study, such criticisms are to be met. Any attempt to develop the system of philosophy would of course raise these special problems. Enough here to emphasize the point of view. Of the concept of finality Bergson has said, "it will never be definitely refuted. If one form is put aside, it will take another. It is very flexible." This is true of all these concepts: they are all very flexible. The question is as to the limits of this flexibility. The limits of the reconstruction of these concepts by logic, whether realistic or idealistic, is determined by the fundamental fact that logic, whatever else it is, is *die Moral des Denkens* and this morality has as its first law, the mutual acknowledgment of meanings and values and the retention of the categories in which these meanings and values are expressed. The destructive criticism of a too intellectualized idealism, to say nothing of its 'thinness,' can be countered only by that reinterpretation of idealism in terms of value philosophy which is already proceeding apace.

IV.

The retention of the original and living significance of these categories is accordingly the condition of philosophical intelligibility. The reason for this is the same reason that bids us retain the living significance of the things to be explained. To reduce such objects as life, personality, the state, *etc.*, to things other than they are is to explain them away and ultimately to be unintelligible.

Part of the reality of these "organic wholes" is their meaning and value—values that must be acknowledged if their meaning is to be apprehended and communicated. To separate the value of an object from its nature and its existence is contradictory. Not otherwise is it with these deeper-lying categories. They, too, in the last analysis, are categories of interpretation, not merely of description and explanation. To use them intelligently implies the acknowledgment of their value connotation also, for they too are value categories.

That this is so, the whole body of philosophical tradition witnesses. The natural light of reason, to use Descartes' words, tells us that the ultimate cause must contain *eminently* all the reality, meaning and value of the effect. The less can be derived from the more, never the more from the less, *e minimo maximum non fit*—these axioms, as Nietzsche, with his usual insight, tells us, are the typical prejudices by which the metaphysicians of all time can be recognized. This is part of the natural metaphysic of the human mind. The intellect is ultimately oriented towards value and this orientation requires that the 'sufficient reason' of any reality shall retain the reality of the thing to be explained. Thus it is also that when we seek to bring the ends of the world together, to make our life and the world in which it is lived intelligible, there is generated a necessary form of intelligibility. Ultimate origination, *sufficient* reason, requires that the meaning and value of things we designate by the category of finality shall in some sense be implied in the ground or cause. Causality and finality must be brought together in a more ultimate concept.

That this is the traditional form of philosophical intelligibility we have seen. The reason that it is the traditional form now begins to become clear; it is the only form that has intrinsic intelligibility.

On the face of it, it seems like a distortion of facts so to describe the driving force of the great philosophers. It is generally assumed that being, pure being abstracted from value, is the ultimate object of traditional thought. With Rickert, I hold this to be "a profound and serious error, and one which the entire history of philosophical thought makes clear." For one thing, none of

these philosophies has been without the conception of different orders of being and degrees of reality, and these are unintelligible if being be separated from value. Traditional thought, it is true, has generally, on the surface at least, made reality substantive and value adjectival. But while it has generally so expressed itself, its inner thinking was in reality the reverse. Being, it is true, appears to be made prior and more ultimate than value. It is in a sense, at once the first and the last object of the intellect. It is the first object because it is the 'given.' It is the last object in that it is the ultimate substance, that which exists in and for itself. But actually the ultimate element in things has always been their value. This is not a property which they have incidentally; it is their constitutive principle, the true essence of every existent. The insistence upon 'the value character of the theoretical' itself is but a modern statement of that which has been the determining principle of traditional philosophy. It is the natural metaphysic of the human mind.

To this natural metaphysic of the human mind, I have said, the whole body of traditional philosophy bears witness. To this 'form of intelligibility' modern thought, I believe also, shows signs of returning. Elsewhere[1] I have discussed at length one aspect of the general question, namely the inseparability of the concepts of origin and value, and have attempted to show that the unintelligible elements in modernist philosophy arise in part from their divorce, and therefore from the denial of the intrinsic form of intelligibility that results. In all this, modernistic philosophy but follows the lead of 'science' in banishing the categories of understanding and interpretation. Yet it is interesting to observe that even science, when it seeks to understand, is forced back to this form of thought. J. A. Thompson has expressed himself in a significant way on this question. Speaking of the question of *epigenesis*, he says:—"In so far as this view (the traditional) means that there is nothing evolved which was not in kind originally involved, that there is nothing of lasting value in the end which was not present in kind in the beginning, it is acceptable." Elsewhere he says it is the only intelligible view. Whatever science, when it becomes philosophical, may say, for philosophical

[1] "Origin and Value," PHILOSOPHICAL REVIEW, Sept., 1923.

interpretation itself, it is the only intelligible form. Lloyd Morgan voices the same general conviction in his *Emergent Evolution* when he distinguishes between causation and causality. With an "intelligible causation" science may have nothing to do. But "philosophy throughout the ages has had very much to do with it." Without such metaphysical causality the *nisus* implied in all evolution can not be understood.

Additional significance may, perhaps, be given to this phase of our discussion if we consider briefly a recent typically modern attempt to free philosophy from this natural form and to abandon all ontology. I refer to the original and enlightening attempt of William James to develop the pragmatic method into an instrument of philosophical interpretation and, more specifically, to separate finality from origin, and the problems of value from problems of being. James explicitly recognizes a world of interpretation and a type of philosophical intelligibility different from that of common sense and science. Under the heading, "Some Metaphysical Problems Pragmatically Considered,"[1] he takes up successively the alternatives, materialism and spiritualism, mechanism and teleology, determinism and free will. On his pragmatic principles, it will be remembered, he argues that these alternatives are irrelevant from the retrospective, scientific point of view. Any decision, preference for spirit, free will, monism, purpose, "have as their *sole* meaning a better promise for the world's outcome. Be they false or be they true, the meaning of them is their meliorism."

James's own decision on these great alternatives is itself interesting. In the main he chooses those characters which the great philosophers have always found inseparable from an intelligible world. It is not this aspect, however, that chiefly interests us. It is rather *why* he chooses them. And here the answer is clear enough. It is only in such a world that a life of significance and meaning can be lived; only such a world is intelligible. But wherein does this intelligibility consist? The meaning of these categories lies in their meliorism. In other words, the question of the truth of these metaphysical concepts can not be separated from

[1] *Pragmatism*, Chapter III.

the question of their value. Nay more, their truth lies wholly in their value—their practical value. Destiny, finality, can be wholly separated from origin, and the concepts of substance and cause, in their interpretative and evaluative significance, eliminated from the vocabulary of philosophy.

This attempt to free philosophical interpretation from 'problems that are supposed to depend upon the nature of reality as such,' is as original as it is fascinating, and has naturally elicited a great deal of interest and criticism. The effort to dissociate questions of meaning and value from questions of substance and essence, finality from causality, destiny from origin, is to be sure now generally recognized for the interesting *tour de force* it is. But this should not be allowed to obscure the important half truth in James's conception. The sole meaning of these metaphysical concepts does not, it is true, lie in their meliorism, their practical value, but an important part does. A still more important part of their meaning lies in their value, if value be freed from its purely practical associations. For description and explanation, in the narrow and sophisticated sense of the word, these metaphysical questions are indeed, as James says, irrelevant. In a world in which certain values were not already acknowledged, it would be immaterial whether the world had its origin in matter or spirit, whether there were freedom or pure determinism. In a word, these conceptions are really significant only for interpretation, and interpretation presupposes communication with its acknowledgment of values.

This recognition, on the part of James, of the conditions of philosophical intelligibility is something for which modern thought owes him much. The *tour de force* in his thinking is his attempt to separate destiny from origin, to renounce the 'form of intelligibility.' What it really means, of course, is that an attempt has been made to combine philosophical intelligibility with ontological agnosticism, to make the world intelligible and livable despite its ultimate impenetrability and incomprehensibility. And *that* must forever remain impossible. To separate the nature of things from its meaning and value means, as we have seen, unintelligibility, but it is no less true that to separate its meaning and value from

its nature comes to the same thing in the end. The essential incoherence of James's thinking from any standpoint but the most limited, is now apparent in many connections. It is at this point, however, that it, perhaps, reaches its maximum, a point, moreover, at which, as in a flash, the essential unintelligibility of much of modernism can be seen.

V.

All this should serve at least to give meaning to our main thesis—that there is an essential form of philosophical intelligibility, a natural metaphysic of the human mind without which intelligible communication and interpretation are impossible. It should also serve to make us the better understand what I have called the Great Tradition, that *philosophia perennis,* that great stream of thought which seems to flow on, unaffected by the superficial eddies which the hypercritical mind creates. We should also begin to see why it is that the simple mind always finds this form intelligible and why the tired philosophical radical, when once he has become twice-subtle, tends to revert to the ancient form. But all this will, perhaps, become clearer if we examine, in the light of the preceding, two aspects of philosophy which have been fairly constant elements in traditional thought, but which modernism has in the main considered it its duty to suppress. I refer to the *a priori* and speculative features of philosophy, features which the human mind could not conceivably seek to deny, except as it misunderstood their real character and the nature of its own activity.

It is not the business of philosophy, it is now pretty generally acknowledged, to prove that the world exists or to demonstrate how it is made. Philosophy is not to show us how to make a world, but to help us in understanding the actual world in which we find ourselves.[1] With this there can be no quarrel and those who demand that, in order to make the world intelligible, we must be able to deduce it, are asking impossible things of philosophy. Nevertheless this modesty on the part of philosophy, becoming as it is, may be so interpreted as to give aid and comfort to its worst enemy, to that form of criticism that would suppress the deepest initiatives of the soul. For the fact remains,

[1] *Cf.*, J. E. Creighton, *op. cit.*

however we may ultimately interpret it, that the masters of philosophy have uniformly sought to communicate their insights into the nature and meaning of the world in the form of speculative deduction.

It is of the utmost importance to understand what is true and what is false in this idea of speculative deduction. "The one intelligible theory of the universe," says Peirce, "is that of objective idealism, that matter is effete mind, inveterate habits become physical laws." However crude we may find this description of objective idealism, I think we may now understand why this has been the uniform interpretation of traditional thought and why Peirce goes so far as to call it the only intelligible one. But that is not the point that I wish to emphasize first. It is rather a still more ultimate assumption made in this statement, namely that *any intelligible view of the world must involve derivation, speculative deduction.* This assumption is unquestionable and borne out by every attempt of the most modern philosophy to make itself intelligible. Bergson may deny intellect in favor of intuition, but an "ideal genesis of matter" which shall in some way be apprehended by the intellect becomes necessary if the import of this intuition is to be matter of intelligible communication. So New Realism, if it is to be more than a mere polemic against traditional interpretation, if it is to be an intelligible world view, must itself become speculative and deductive, and such a book as *Space, Time, and Deity* is the result. If space and time have not their genesis in Deity, Deity, if it is to be kept in the circle of our ideas at all, must have its genesis in them. Some element of deduction is, I repeat, involved in any intelligible world. We may merely analyse and describe and a certain limited intelligibility results. We may explain genetically, up to a point perhaps, without giving any aspect of reality a privileged position, and a certain further increment of intelligibility appears. But somewhere, if there is to be any real intelligibility, axiological interpretation must appear, a privileged position is given to something, and speculative deduction necessarily enters in. Or it would be truer to say, perhaps, that something *has* been given a privileged position from the beginning, axiological interpretation is present from

the start. Only the sincerity to acknowledge it is lacking. All evolutionary naturalisms, of whatever type, are such speculative deductions, only the normal form or order of interpretation is reversed.

Every attempt of the most modern philosophy, I repeat, to make itself intelligible ends in speculative deduction. It is, however, only the traditional or normal order which, according to Peirce, is intelligible. What can be meant by calling it intelligible at all? Surely the attempt to deduce matter from mind, the not-self from the self, is as complete a failure as any of the reverse reductions! It is entirely possible, for instance, to say that these speculative deductions are merely reversed psychology, reversed logic, or perhaps reversed ethics, and these, if one cares to use such expressions, may all be classed as forms of animism, amiable or otherwise. Objective idealism may be, from one point of view, but an hypostatization of values as first cause, as ultimate end, or as immanental essence or substance to which both cause and end are reduced. But what of it? To say these things is to stop just where the real problem begins. The real problem is rather this: *why* do these speculative deductions, these reverse movements, appear to make the world intelligible, and *why* are they the only form that does?

It is at this point, I think, that the essence of philosophical intelligibility, and the true, as distinguished from the false, in speculative deduction appears. *Why* is some deductive form necessary, and *why* is the traditional form the only one that seems to make the world intelligible? Is it not, first of all, that we *must* give the privileged position to something and to do that involves, by the very nature of the process, the form of speculative deduction? Is the traditional form not the intelligible one because, by the very character of that to which it gives the privileged position, it expresses, always more or less inadequately to be sure, the true meanings and values of things? Ontology may not be *merely*, as Rickert says, "a round about way of solving the value problem," but it is at least that. The only form of intrinsic intelligibility, we have seen, is value movement of some kind. In the last analysis, perhaps, the only thing that we immediately understand is a

will acting for the sake of the good. But for our purpose it is not necessary to go so far. It is enough to insist that speculative deduction, evolution or devolution, some form of movement along the value scale, is the form which any interpretation of reality will inevitably take. Only in such a form can the meanings and values of things be communicated. Such a movement can, however, really be *thought*, only in case the *nisus* of the movement is expressed in terms of activity, in terms of an intelligible causality. In so far as this means that there is nothing evolved which was not originally involved, that there is nothing of lasting value in the end that was not present in kind in the beginning, it is not only acceptable, as Thompson says, but the only form of thought that is intelligible.

Speculative deduction is then the necessary form of the communication and interpretation of the meanings and values of things. For my own part I believe that the great philosophers have all instinctively recognized this and that all have thought better than they spoke. As Plato and Plotinus both instinctively distinguished between that which was philosophy and that which was myth in their thinking, so Fichte and Hegel were wholly aware of the element of figure in their generation of concrete reality by the dialectic. All of them, if we take them at their best moments, express themselves with reasonable sense and intelligibility. One of these best moments was that in which Fichte, *à propos* of criticism of his laborious attempts to deduce the Non-Ego or object from the Absolute Ego or bare subject with which he starts, tells us that "he never attempted what would be comparable to writing a man's biography before his birth." He tells us in other words that he has not been narrating what ever took place, but attempting to give an intepretation of reality in its distinguishable but inseparable aspects and moments. It was Hegel who said, in the *Encyclopaedia*, that "Nature must be regarded as a system of stages or degrees in which one necessarily proceeds out of the other, *not however in such a way that one is necessarily produced out of the other*, but in the inner idea that constitutes the ground of nature." Shall we ever get over the naïveté of thinking that the great systems are descriptions of what is sup-

posed to have taken place? As though that were the beginning and end of intelligibility! Shall we ever understand that the great philosophers were not the fools the simple-minded often take them to be? That they have the desire neither to make a world nor to remake it, but rather to understand it? Shall we ever learn what the language of metaphysics really is?

VI.

Speculation, in the bizarre and imaginative sense of the word, has indeed, as it has been well said, passed largely from philosophy to science. Romantic speculations have come largely from science and scientifically-minded philosophers. The reasons for this are obvious. Seasoned philosophers have long since come to understand the auxiliary, and to a degree figurative, rôle which such speculations have in the larger business of philosophical intepretation. Science, on the other hand, remains incurably adventurous and romantic. If it can not accept the positivistic command to renounce all understanding—and to renounce intelligibility is in the long run difficult if not impossible—there is nothing left, on the premises of science, but to resort to the picturing imagination. Scientific romancing is but the revenge which the ghost of the murdered philosophic spirit takes upon its murderers.

The form of an intelligible world involves, then, to return to our main point, an element of speculative deduction. Intelligibility involves the bringing of the ends of the world together in some concept of ultimate reality. Nor can this be done except by the use of the deeper-lying categories of substance, cause, and purpose, in all their original and living significance. Transformation (perhaps detemporalization) of all these concepts may be necessary to make them intelligible, but whatever flexibility these categories may possess, whatever transformations they may admit of, the value character of the theoretical must be retained, if there is to be intelligibility. The introduction of this word *must* leads us to our second question—that of the *a priori* element in intelligible communication and interpretation.

It is part of the modern spirit that all philosophy, idealistic as well as realistic, should emphasize the claims of what is called ex-

perience upon us. To acknowledge this is merely to admit that no speculation in the bizarre and romantic sense is desirable and that no individual system of philosophy is final. But this does not exclude, as Royce says, the recognition of what every competent thinker, realist as well as idealist, knows, that there are no fundamental truths of experience itself for which we can give any reasons that are not in part at least *a priori,* reason being defined in terms of the internal necessity which makes itself manifest in every act of thought and its communication. Such an element of internal necessity must, I think, be ascribed to the form of philosophical intelligibility as we have developed it. It is the natural metaphysic of the human mind, that to which every one must come if he seeks to put experience in the form of reflection at all.

The word *must* has, indeed, a most unmodern sound. "Must," it is said, "was made for human beings in the relation of superior to subject. It has no place in science, though the science of man takes account of the 'must.'" How can any one now-a-days speak of an *a priori* form of an intelligible world? We point to the incalculable element in reality and ask how any one can presume to say that the world must be so. We point to the story of the mind, of the mind in the making, and ask how such a mind could presume to dictate an eternal form. We ask finally, why any necessity of a really intelligible world at all?

Starting with this last question we may indeed admit—and without hesitation—that the necessity of an intelligible world may always be denied. One may be content with mere living, with mere immersion in life, although even then a minimum of meaning and value is assumed. One may be content with mere external description, with that limited intelligibility which comes from mere control and manipulation. Although even then a minimum of meaning and intelligible communication is presupposed. Yet it must be admitted that from such extra-philosophical standpoints, it is undoubtedly a *petitio principii* to demand a form of philosophical intelligibility, or indeed an intelligible world at all. The "internal necessity" we have in mind arises *only if we acknowledge* the demand for a world and for intelligible communication

and interpretation of its meaning. But once this demand is acknowledged, certain internal necessities make themselves at once apparent.

A minimum of this 'must,' this necessity, is at once evident. 'Must' was, to be sure, made for human beings, but not necessarily in the relation of superior to subject. It is a relation which arises wherever there is communication. There is the demand that we make ourselves intelligible if we speak at all. That is the minimum of compulsion, that no one, not even a philosopher, can escape unless he takes refuge in pure impressionism and solipsism. What this compulsion involves we have already seen in an earlier paper on the conditions of philosophic intelligibility. Mutual acknowledgment of values is the *sine qua non* of intelligible communication of meaning. (Even ontological and truth predicates imply such values.) That to separate the reality of an object from its meaning and value is contradictory, is an 'axiom' that is assumed consciously or unconsciously in all intelligible discourse.

Philosophers have been fond of saying that unless those to whom they are speaking acknowledge the will to truth or 'the will to a world,' etc., there is no use of further argument, and from such statements the more frivolous thinkers have got much amusement. But, after all, is not this at least the beginning, if not the end, of all wisdom. Surely the acknowledgment of identical meanings and values is the first condition of intelligible communication, the *a priori* of an intelligible world. The essential truth of this position has found expression in the so-called 'value philosophies' in their imperativistic and voluntaristic forms. It is, not necessary, however, to talk about an over-individual *Sollen* or *Wollen* in order to recognize that acknowledgment of identical values is the condition of intelligible discourse. If such terms seem to turn metaphysics into a transcendental psychology, they may be avoided and we may content ourselves with those brute necessities of acknowledgment for which Mr. Lloyd Morgan uses the euphemistic if ambiguous term of 'natural pieties,' those demands which know no distinction between realist and idealist, and which both must acknowledge if they are to make themselves intelligible.

Classical illustrations of the unintelligibility that arises from refusal to acknowledge these internal necessities were given in our earlier paper, cases of description and explanation that implicitly deny the meaning and reality of the very things they purport to describe or explain. Such propositions, we said, do not refute themselves, as is sometimes held. But the enunciator of them refutes himself, if by them he intends to convey an intelligible meaning. It is not without reason that philosophers have defined the *a priori* as that the opposite of which can not be contemplated and the test of the *a priori* as that of self-refutation. But there is really nothing the opposite of which can not be affirmed, if the one who thinks it is abstracted from the world of communication and intelligible discourse; there is no proposition which, when isolated from this world, and the mutual acknowledgments it implies, is self-refuting. It is only in such a world that internal necessities of thought arise, but in such a world there is always a 'must.'

So much for the general question of the element of internal necessity which must characterize philosophical interpretation. Has now the traditional form of interpretation, the natural metaphysic of the human mind, this *a priori* character?

We have already indicated in a general way that it has and why it has. The form of an intelligible world is determined directly by the conditions of intelligible communication and interpretation. Elsewhere[1] we have sought to show this in detail in connection with the problem of origin and value and to indicate how those philosophies which do not acknowledge this form become ultimately unintelligible. A similar line of thought could be worked out for finality and destiny—that there are limits set to the modern transformations of finality beyond which such transformations can not go without the concept losing intelligibility. It would be possible also to show how this *a priori* element in interpretation determines the "system" of philosophy. Here we shall content ourselves with attempting to make our general argument for the necessity of this natural metaphysic more definite and explicit.

The *a priori* character of this form, it has already been said,

[1] "Origin and Value," PHILOSOPHICAL REVIEW, September, 1923.

arises out of the very conditions of intelligible discourse themselves. Description passes insensibly into explanation and explanation into interpretation. They can be separated only by a sophistication that ends ultimately in sophistry. Another way of stating this is to say that interpretation is already involved in all description and explanation. To describe a thing as coming out of nothing or passing into nothing is already to evaluate or interpret that thing, as the nothing out of which it comes or into which it goes. To explain something by deriving it from something it is not and developing it into something it is not, is to deny it all real intelligibility. An absolute novelty has no meaning and value, and for that reason no intelligibility. Identity in difference is the root of both intelligibility and value. Thus it is that a natural metaphysic involves of necessity the bringing of causality and finality together in an underlying unity. This, as I have said elsewhere, Bergson saw clearly enough when he admitted that this is what every mind must do if it follows the natural bent of the intellect to its conclusion, the only other alternative being to turn one's back upon it, and to renounce intelligibility.

But Bergson also saw—and this is the point to which we have been leading up—that you can bring the concepts of causality and finality together only on the basis of a more ultimate concept or postulate. You can do it only, he points out, 'if you postulate a kind of metaphysical necessity in virtue of which the confronting of the all (perfect being) with the zero (non-being) is equivalent to the affirmation of all the degrees of reality that measure the interval between them.' This is the natural postulate of the intellect, one which not only constitutes the base of Greek philosophy, but the framework of the entire philosophic tradition.[1]

Now this 'metaphysical necessity,' as Bergson calls it, is precisely the internal necessity of which we have been speaking, the inner core, the essential form of philosophical intelligibility—the *a priori* of an intelligible world. It is simply another way of saying that becoming is itself unintelligible unless it is passage from higher to lower, or lower to higher levels, and the very acknowledgment of these levels within becoming implies that the levels

[1] For a fuller development of this point see "Origin and Value," already referred to.

themselves are not temporal. And this, I maintain, is just what every philosophy that attempts to make the world intelligible must assume or postulate. There is no type of thinking, surely, for which the world is not assumed to be intelligible in some sense and in some degree. But as soon as this assumption is made these non-temporal levels are implied. The presence of any meaning in the world, it requires little thinking to see, implies the existence or subsistence of differences in meaning and value. If every phenomenon has equal significance, if one is, so to speak, as good as another, there is really no significance and no value. Now I take it that the first condition of any intelligible communication and interpretation of experience is the recognition of the differences of meaning and value within the temporal experience, and this presupposes the acknowledgment of non-temporal levels. But what now does this imply? With Bergson, we may say that to bring causality and finality together in one underlying principle implies this postulate. But we may equally well say that to postulate these levels means no less certainly the bringing of causality and finality, origin and destiny, together in one system of interpretation.

We have not hesitated to use the word *must* in our argument, despite its most unmodern sound. But our real contention is, not so much that all philosophers must, as that they actually do, acknowledge this form of intelligibility when they seek to make the world intelligible. "How unfailingly," marvels Nietzsche, "the most diverse philosophers always fill in again a definite, fundamental scheme . . . Under an invisible spell they always revolve once more in the same orbit, however independent of each other they may feel themselves . . . something within them leads them, something impels them in a definite order, the one after the other,—to wit the innate methodology and relationship of their ideas." Nor should we be surprised that to this compulsion, this invisible spell, the moderns are also yielding, even against their will. They too, as has been indicated, are again beginning to fill in this definite and fundamental scheme. It may be that their thinking is, in fact, as Nietzsche continues, "far less a discovery than a recognizing, a remembering, a return and a home-coming"

and in so far "a kind of atavism of the highest order." Perhaps it is rather the "Divinity that shapes our ends, rough-hew them how we may."

VII.

The *a priori* and speculative elements in traditional thought are, I ventured to say, features which the human mind could not conceivably seek to deny except as it misunderstood their real character and the nature of its own activity. Yet they are features which modernism constantly denies and doubtless will continue so to do.

Men will continue to point to the incalculable element in reality and ask how we can presume to say that the world must be so, to the mind in the making and ask how such a mind should presume to dictate an eternal form. They may indeed, as many are now doing, make the categories of change and history ultimate and deny the possibility of all system. If we care to go to the limits of possible paradox, we may even express the most modern of sentiments and say that every attempt to give form to the world but increases its confusion and irrationality, for that very form itself is but a new element in the empirical content of the world, one more novelty to master. In short, the only final element in thought is that there is no finality.

It is always possible abstractly to say these things, but it is then always a question whether they are really intelligible. In any case it is here, if I mistake not, that we come upon the worm that gnaws at the very heart of all modernistic philosophy.

The contradiction between the timeless form and the ever-changing content of knowledge is, it is true, the philosophic "worm that dieth not," but its gnawing has become so intolerable that the modern mind has sought surcease from pain in the paradox of pure dynamism. Life, to be intelligible, requires form, but form kills life, so life must ever be the enemy of form. Forms of thought, like the commandments of morality, are made only to be broken. With the vain and heart-breaking attempt to make absolute becoming intelligible all the distinctively "modern" minds are engaged. Bergson, Simmel, Croce, Alexander, to take only typical examples, each in his own way, wrestles with the problem.

All demand that we "take time seriously," and no one will deny, I fancy, that they have a serious time in doing so.

For the purpose of these closing remarks it is unnecessary to make distinctions among these views. The point that I wish to make is that when the modern denies anything like timeless form to thought, he does so really only by assuming the absoluteness of another form. It becomes then merely a question of the intelligibility of this new form. If, for instance, evolutionary naturalism or realism, appealing to biology and psychology, tries to tell the critical philosopher that his forms of thought are mere adaptations, his rational structures mere "rationalizations," the latter can afford to receive this statement with a smile. For this very concept of naturalistic evolution is itself not a fact, but a form of thought, and a peculiarly unintelligible one at that. For does it not make unintelligible the very science upon which the structure is raised? If again appeal is made to history rather than biology, and history is made the ultimate form to which even philosophy itself is reduced, it is still a form of thinking to which we are appealing and this form is made absolute. Is it very intelligible to make either biology or history final, even for the purpose of denying all finality?

Of this denial of all finality to philosophy Croce has said: "What was at the beginning of the nineteenth century merely a simple presentiment becomes changed into a firm consciousness at the beginning of the twentieth." The twentieth century will above all things take time seriously, and upon this seriousness it prides itself. One may at least be permitted to wonder whether time, with all its little ironies, will return the compliment. The classical, as Guyau has said, is reality purified by time. Will this firm conviction withstand the purifying process?

WILBUR M. URBAN.

DARTMOUTH COLLEGE.

THE EINSTEIN THEORY AND A POSSIBLE ALTERNATIVE.[1]

THAT abstract and specialized form of the love of wisdom, which arrogates to itself the generic name of Philosophy, has throughout its history been sustained by two great intellectual interests, the interest in nature and the interest in man. Now the one and now the other has predominated in the product of their union, but the greatest systems of philosophy have contributed richly and almost equally to physical theory and humane interpretation.

The nineteenth century was noted for an unprecedented progress in the knowledge of nature; and, unlike the previous periods of such progress, the gains made were due not so much to generalized deduction as to specialized and diversified experimentation. For perhaps the first time in history the sciences got completely out of hand and established their independence of philosophy. The great syntheses of Comte and of Spencer, designed by their authors to incorporate the new bodies of knowledge into a unified world-view, were on the whole failures. They were not sufficiently specific to win back into any real union the various groups of scientists, and they were too naturalistic and mechanistic to appeal strongly to the professional philosophers. These latter had not forgotten the failure of the German transcendentalists in their *natur-philosophie*; and to compensate for the trauma which that failure inflicted, they had built up a defense-mechanism consisting of a well-simulated contempt for the works of nature. As a result of all this, philosophy in the past hundred years has become definitely introverted; and its former healthy interest in cosmology has been replaced by a morbid concern for its own processes and an antiquarian curiosity as to its own past.

This somewhat arid preoccupation with matters of history and of method has indeed been supplemented during the last few years by a new and wholesome concern for the humanistic prob-

[1] Presidential Address, Eastern Division of the American Philosophical Association, Brown University, Providence, R. I., Dec. 28, 1923.

lems of psychology and sociology. But humanistic philosophy is at best only one half of philosophy. And at a time like the present, when the science of physics in its theories of Relativity and of Quanta is approaching what may be a great climax in the intellectual life of the race, it is indescribably humiliating that we who claim to represent the tradition of Plato and Democritus, of Descartes, Leibniz, and Kant, should have allowed ourselves to become so indifferent to the physical world and so ignorant of the new discoveries concerning it that we are unable even to appreciate the situation with which science is confronted.

In full realization of my ignorance of the mathematical technique of the Theory of Relativity, I have nevertheless chosen it as the topic of this address, and for three reasons. First, because I hope that my discussion may help in some small way to renew our ancient interest in cosmology. Second, because the errors and misinterpretations of which I may be guilty, and which some of you may share, will perhaps tempt our scientific brethren to come to the rescue with clearer and simpler explanations. And thirdly, because there is always a chance, however slender, that even a layman's criticisms and comments may contain something of value and of truth.

I shall confine my discussion mainly to the Special Theory of Relativity and shall consider *I*, its chief characteristics; *II*, the nature of its premises; *III*, the possibly fatal paradoxes to which it leads; *IV*, the crucial assumption contained in its premises; *V*, an experiment designed to test the crucial assumption; and *VI*, the nature of the alternative to that assumption. In conclusion I shall offer some comments on the meaning of the General Theory of Relativity and on the prospect which it seems to offer of explaining the physical world with a clarity and completeness that none but the great metaphysical rationalists have dared to hope for.

I. The Chief Characteristics of the Special Theory of Relativity.

The earlier or Special Theory of Relativity may be described as a new and peculiar theory of the nature and connection of space and time and of the methods which we must use in measuring them.

I think that the principal points of the theory may, for our purposes, be summarily stated under five headings.

1. Space and time have no existence apart from the rods and clocks by which they are measured. Of each of them we may say: *esse est mensuri.*

2. The events whose relations constitute the spatio-temporal order of nature are identical with the sense-data of individual fields of experience. They are not to be conceived as internal effects of an external world; but rather are they to be conceived as overlapping and interpenetrating perspectives. In place of a world of extra-individual causes we are to substitute a system of inter-individual laws as the norm or standard for measuring and comparing our experiences. We are to adopt a relativistic form of epistemological monism rather than the epistemological dualism of traditional science.

3. Space and time do not vary independently as Newton believed. They are as dependent upon one another as upon the experiences by which they are measured. *When* events are observed to happen has no meaning apart from *where* they are observed to happen. Two events are intrinsically simultaneous only when they occur in the same place. Otherwise they will be simultaneous for some but successive for others.

4. Time is a fourth dimension of the one world whose other three dimensions are those of space. But this does not mean that time *is* space, nor does it even mean that the time dimension is related to the other dimensions as they are to one another. In measuring the interval, ds, between two events in space-time, the squares of the subsidiary space-differences, dx^2, dy^2, dz^2, are positive, while dt^2, the square of the time-lapse, is negative. This is expressed by the equation

$$ds^2 = dx^2 + dy^2 + dz^2 - dt^2.$$

The four-dimensional world of space-time is thus 'hyperbolic,' 'Lobachewskian,' or of 'negative curvature' as regards the dimension of time; though, when free of gravitational or other forces, it is 'parabolic,' 'Euclidian,' or of 'zero curvature' as regards the three dimensions of space.

5. Einstein's 'light' is the most wonderful thing in the world.

Its velocity is a definite finite quantity, about 186,000 miles a second. But though finite, it behaves in one respect like zero and in another like infinity. It behaves like zero because the squares of space and time enter equally, but with opposite signs, into its measure, so that when dx^2, the space factor, equals dt^2, the time factor, then $dx^2 - dt^2$, which determines the interval between any two events on the path of a light ray, is zero. The movement of light in space combined with its movement in time cause it, as it were, to stand still. All events on any one light ray happen at the same point-instant in the space-time of the world. Notwithstanding this resemblance to zero, the velocity of light also resembles infinity, because it is not altered by the addition or subtraction of any other velocity such as that of an observer moving toward the light or away from it. Light is for Einstein the new and only absolute in a world where all else is relative.

II. THE PREMISES OF THE SPECIAL THEORY.

And now that we have stated in summary fashion what appear to be the five main points of the Special Theory of Relativity, let us turn to a consideration of the evidence by which the theory is supported and by which Einstein was led to adopt it. We shall find this evidence to consist partly of an assumption and partly of concrete facts. The assumption is that the velocity of light waves is not affected by the velocity of the source from which the light waves emanate. The facts are those revealed by the great experiment conducted by Michelson and Morley in America in the year 1887.

I shall try to persuade you that although there is no reason for doubting the alleged facts of the Michelson-Morley experiment, there is reason for doubting the assumption that the velocity of light is independent of the velocity of its source; and later I shall try to prove to you that if that assumption is false there is a perfectly clear alternative to the Einstein theory which must be accepted in its place.

I will begin by recalling very briefly to you the nature and consequences of the Michelson-Morley experiment. Let us suppose ourselves on a train, very broad and without walls either at the

ends or sides. We have reason to believe that our train is moving silently and with uniform velocity through the motionless atmosphere, though for some reason we are not able to feel or measure the pressure of the air as it rushes by. In order to find out whether we really are moving and with what velocity and direction, we make the following experiment. A tuning fork is set vibrating and from it there proceed in all directions sound waves moving relative to the air and regardless of our motion at a constant velocity of 1,090 feet a second. One of these sound waves we split into two halves; the first half goes forward to a reflecting mirror on the front of the train for a thousand feet and is reflected back to the ear of an observer, the other half of the sound wave goes out to the side for the same distance and is reflected back to the same observer. It is admitted by everybody that if our train is moving and if the two waves move at equal velocities with respect to the air which is their medium, it will take longer for one wave to go and return than for the other. And by observing which wave takes longer and how much longer it takes we can determine the direction and magnitude of our velocity through the air. This can easily be seen if we suppose that we are moving almost as fast as sound itself and in the direction of the wave that goes forward toward the engine. If our train was moving forward at the velocity of 990 feet a second, the wave going forward at its regular rate of 1,090 feet a second would gain only a hundred feet a second over the train, so it would take it 10 seconds to reach the reflecting mirror which is 1,000 feet ahead; and although its return trip would only take about half a second it would still be far behind the wave that had gone off to the side and back. It takes longer for a swimmer to swim down the current of a river and back than to swim at the same rate and for the same distance relatively to the river across the current and back. The difference in the durations of the two trips measures the speed of the current or of the train as the case may be.

Now substitute our earth for the train, and waves of light in the ether for waves of sound in the air, and we have the Michelson-Morley experiment which was designed to test the motion or drift of the earth through the ether. To the surprise of every-

body the results were negative. The two rays of light reunited on the return from their journeys without showing the interference bands which would certainly have been caused had the one ray taken longer to go and come than the other.

How were the negative results of this epoch-making experiment to be interpreted?

By Lorentz and Fitzgerald independently, it was suggested that if the unit measuring rods decreased in length in the direction of their motion through the ether in the ratio of $1 : \sqrt{1 - v^2/c^2}$, where v is the velocity of the earth and c is the velocity of light, the failure of the experiment to disclose such a motion could be explained in the following way. The distance measured out in the direction of the earth's motion would have been measured in smaller units than the distance out to the side, hence the path which the forward-going ray would have to travel would be enough shorter to make up for the greater duration of its journey.

This ingenious hypothesis of Lorentz and Fitzgerald has not, so far as I am aware, ever been disproved; but it possesses a kind of methodological disadvantage because it assumes an action of ether on matter which is inferred *ad hoc* to meet this single difficulty and which is in comparative isolation from the general system of physical theories.

Einstein's way of accounting for the negative results of the Michelson-Morley experiment is quite different and involves a radical break with the intuitions or prejudices of common-sense. *To the old assumption that the velocity of light is independent of the velocity of its source he adds his own new hypothesis that the velocity of light relatively to any observer is independent of the velocity of that observer.* This means that whether an observer goes toward a ray of light or away from it, he will pass it at the same rate. This is the essence of the special theory of relativity. However true it may prove to be, it is in appearance paradoxical in the extreme. Any finite velocity previously imagined will give unequal results when unequal velocities are added to it. The velocity of light is like an infinite quantity in that any other velocity added to or subtracted from it leaves it unchanged. Denoting this new absolute by c we must believe that $c - 10 = c - 5$, that

$c + 100{,}000 = c - 100{,}000$. In short, $c \pm$ anything is still equal to c. If c were infinite we might not balk, but c is finite and measurable, equal to 186,000 miles a second. We are asked to believe that though finite it can claim the privileges of the infinite.

The rest of the theory consists of the supplementary assumptions which must be made in order to keep the primary assumption from conflicting with the facts of observation. These assumptions, as we have seen, include the belief that not only measuring rods but clocks also change their units as they change their velocities and that the velocities which cause these changes are not absolute with reference to a fixed ether but relative to anything whatever. We must not belittle these assumptions by interpreting them merely as a new set of metrical conventions. They are partly methodological or subjective rules and partly (alleged) physical facts.

III. The Apparent Paradoxes of the Special Theory.

Now that we have seen something of the nature of the Special Theory and of the evidence that led Einstein to formulate it, let us inquire as to whether the theory is self-consistent and in agreement with fact, or whether it leads to contradiction and to error. I shall try to show you that there are at least three possible situations in which the implications of the theory appear to contradict either its own peculiar assumptions or the assumptions which it shares with common-sense. For reasons which will appear, these situations might be respectively entitled: 1. Two Friends, a Radio and an Eskimo; 2. The Land of the Mad Dictator; 3. When the Traveler Returns.

1. A New Yorker and a Californian agree that if the Einstein theory is true it should be possible by the exchange of radio messages to discover whether or not the cloud-covered earth on which they live is rotating on its axis. They choose their respective positions 3,000 miles apart and on the same parallel of latitude. They then undertake to synchronize their clocks. This procedure is in general repulsive to the Einsteinian because he wishes to abandon the assumption of simultaneity at a distance and to substitute for it only such temporal correlations of clocks as can be got by ex-

changing light signals. Our friends, however, may plead that even on a revolving platform or globe the Special Theory admits that clocks at the same latitude or distance from the center go at the same rate. There is indeed no sufficient reason for them not to do so, as their positions are perfectly symmetrical. Moreover our friends agree to observe the Einsteinian etiquette to the extent of setting their clocks by light signals. They do, however, insist on abandoning the question-begging method of a merely *tête-a-tête* exchange. They are going to establish a triadic rather than a dyadic chronometric standard. To this end they employ a trained Eskimo who lives at the North Pole and revolves on his axis or not according to whether the earth revolves on its axis or not. In either case he is equi-distant from the two friends and his state of rest or motion is symmetrically related to theirs. They regulate their clocks by his clock and if, when thus regulated, their clocks go slower than they otherwise would, it is no matter for at least they go at the same rate. It is agreed between the experimenters that when through their radio-telephones they hear the Eskimo say *Go!* they are to radio the same word to each other, and each is to note with a stop-watch the time that elapses between his giving his own signal and receiving that of his friend. Now if, as may be true, the earth really does revolve from West to East, the Californian will get the New Yorker's signal in a shorter time than if the earth was standing still, for he will be going to meet it, and even Einsteinian light travels a shorter distance in less time than it does a longer distance. The New Yorker will be moving away from his friend and hence will get the signal in a slightly longer time than if the earth had been at rest. The difference between the times as measured by the friends will discover to them the rotation of their globe; and the sense and degree of this difference will reveal the direction and the velocity of the rotation. We can imagine that on completing their experiment the participants will hasten to congratulate each other. And well they may; for they will have done something which though it may not be heinous in itself is at least forbidden by the Einsteinian laws. *They will have proved absolute rotation from the internal evidence of their own system.* And they will have proved it kinematically and not dy-

namically as Newton did by appealing to a centrifugal force which some follower of Ernst Mach can later attack by postulating suitably attractive fixed stars. Our investigators will, moreover, have played the game according to the Einstein rules—just giving and receiving signals. Of the stars that may lie beyond their cloud-covered planet they know nothing and care less, and any attempt to drag in these bodies and ascribe to them mysterious pseudo-gravitational equivalents of centrifugal forces will be even more offensively gratuitous than usual.[1]

[1] The technique of radio-telegraphy and of chronometry is probably not sufficiently developed at present to make the experiment just described more than imaginary or hypothetical. But none the less its implications have a theoretical significance much more far-reaching than that of forcing the Einsteinian to what he (though not we) would regard as a *reductio ad absurdum*, viz., a proof of absolute rotation.

The experiment would in the first place be a crucial test of the generally accepted belief that the velocity of light is not affected by the velocity of the source from which the light comes. For if this assumption, which is held equally by the older and the newer physics and by both Einstein and Lorentz, is valid, the results of the experiment would certainly be *positive*, and just as described in my story. While if on the contrary, (as I myself believe, and attempt later to prove) that assumption is *not* valid, then the results of the experiment would be *negative*, because the radio waves from the Californian (moving eastward) would go enough faster than the waves that issued from the receding New Yorker to compensate for the increased length of their journey. In this respect the experiment would serve the same purpose as the one which I shall in a few minutes seriously propose that we perform.

But now, in the second place, suppose that the results were positive as recounted in the episode of the two friends, then it *would be possible by an extension of the experiment to decide between the theory of Lorentz and the theory of Einstein*. This could be done in the following way: Our two friends would abandon California and New York in favor of Europe and South Africa, and take their positions not on the same parallel of latitude but on the same meridian of longitude. These positions would be three thousand miles apart as before, the one north of the equator, the other an equal distance south of it. To synchronize their clocks they would use not an Eskimo at the Pole but let us say a Pygmy at the Equator. They would then proceed as before with an inter-change of radio signals. Now on *any* theory the north-going and south-going signals would take equal times; but if Einstein is right these times would also be equal to the *mean* of the west-going and east-going times of the earlier experiment, while if Lorentz is right the longitudinal times would be slightly greater than the mean of the latitudinal times. The reason for this discrepancy would lie in the fact that on the Lorentzian theory the latitudinal (but not the longitudinal) units of space-measurement would have undergone the Lorentz-Fitzgerald contraction because of the earth's rotation; and thus the signals would really have traversed a shorter distance through the ether over the 3000

2. I pass now to a second consequence of the Special Theory, which, like the one just given, appears to contradict the premises from which it follows. We will put the case in the form of an allegory and compare the world of Einstein to a country ruled by a Mad Dictator. The Dictator besides being mad is passionately fond of motoring. He drives everywhere, and always at the tremendous speed of 186,000 miles a second. He has two curious whims which he has imposed upon the country by edicts. The first of these whims is that without changing his own speed he shall always be able to pass every citizen at the same speed, so that whether a citizen is at rest or is moving fast or slow, north or south, the Dictator must always pass him at the same speed. The second whim of the Dictator is that no two objects shall ever pass each other at a speed greater than that of the Dictator himself. The people love their ruler and gladly obey his laws; and being skilled in mathematics they have their motors equipped with clocks and speedometers which are cunningly adjusted so as to register not only the speed relative to the road but also the speed relative to every moving object which they may pass. When diverse velocities are compared with the velocity of the Dictator the people accept the axiom that when unequals are added to equals the results are equal. If any speedometer fails to record the Dictator's speed as constant relative to the citizen's own speed, no matter what that may be, it is known to be wrong and is immediately confiscated.

As to the second great law that no two bodies shall ever pass each other at a velocity greater than 186,000 miles a second, it happened that in the early days of the dictatorship a traffic policeman who had just been appointed caught sight of two motors approaching his crossing from opposite directions. He recognized the drivers as the Beta brothers, nephews of the Dictator and

miles measured east and west than over the same distance measured north and south.

I have thought it worth while to state this at some length because, so far as I know, there has never been suggested the possibility of even a hypothetical decision by experiment between the Lorentzian and the Einsteinian interpretations of the Michelson-Morley results. The preference for Einstein seems to be based only on the methodological ground that the Einsteinian formulae are simpler and more uniformly applicable than the purely Lorentzian.

famous or rather infamous for the furious speeds at which they drove. On this occasion he noted that they were each travelling at 7/8 the velocity of the Dictator himself. The policeman was an honest loyal fellow but a bit dull in arithmetic. Hence he reasoned that if the young men passed him in opposite directions going at 7/8 the speed of their uncle, they would pass each other at almost twice that speed. Figure it as he would, he always came back to the absurd conclusion that 7/8 + 7/8 would make 14/8. So he ordered the speeders to stop, and politely handed them the customary summons. When their case was called, the judge of the traffic court asked each of them to state the readings of his speedometer. They testified that their speedometers had been constructed in the manner approved by the Dictator and that the records showed that they were indeed moving towards one another, and that relative to the officer their velocities were 7/8 of 186,000 miles a second, but that with reference to each other their velocity, as measured, was only about 15/16 that of the limit allowed by law. The judge realized that everything was correct, discharged the defendants with an apology for the inconvenience to which they had been put, and sternly reprimanded the officer who had caused the arrest. The poor cop, greatly humiliated, muttered something about his calculation that 7/8 and 7/8 would make 14/8; whereupon the judge after threatening to punish him for contempt of court delivered himself of the following weighty pronouncement: "In all measurements of relative velocities the method shall be dyadic and never triadic. That is to say, every person when in motion shall measure the speeds of other persons relative to one another separately and in terms of his own clocks and measuring-rods. He shall not commit the error of the traffic officer and calculate the speed of bodies relative to one another by adding their speeds relative to him. If two and two were put together in such a manner they might make four, even though the law called for only three. The relative speeds of two bodies must," he repeated, "always be measured directly and dyadically from the point of view of one of them and never calculated triadically or indirectly from the point of view of a third. The triadic system would lead straight to Bolshevism and even the dis-

cussion of its implications is henceforth prohibited." The policeman however, having by this time recovered his self-possession, begged so earnestly for one more chance to speak that the judge gave his consent. The officer began by repeating reverently the motto which the country had adopted when the dictatorship was established: 'Let us set the clocks of the universe and we care not who makes its laws.' He was, he said, as loyal to those great words as anyone in the court-room, but he felt that it was not only a right but a duty to point out that his complaint that the Beta brothers had exceeded the speed limit relatively to one another was supported not merely by the calculation which he had already put in evidence but by the testimony which the brothers themselves would have been willing to give had they been asked. For both before they had started from the opposite ends of the Boulevard and also after they had been halted by him they would be willing to admit that the distance separating them was such that they could only have come together when they did by travelling relatively to one another at a speed of 14/8 the velocity of the Dictator. "And is it fair," asked the policeman in conclusion, "that the space and time measurements taken while a journey is in progress should entirely supplant measurements which were made at the beginning and end of the journey, especially when it is the latter set of measurements which agree with one another as well as with those of a neutral third party?"

To this final plea the judge made no reply except to adjourn the court. But at least one spectator was convinced that the officer's point was a valid one and revealed a contradiction between the time and space measurements made while travelling and the permanent and self-consistent results of measurement which must be deduced or inferred after the travel was over.

3. The third illustration of an apparent conflict between the implications of the Special Theory and the assumptions which it shares with common-sense, results from applying the change of time which all moving bodies undergo to the special case of a living body or organism. If two events are separated by a certain length of time on our system, it is possible by using a formula derived from that applied to measuring-rods by Lorentz and Fitz-

gerald for us to calculate the quite different time-lapse between those same events as experienced or lived through on another system moving relatively to us. And just as the space distance always grows less the faster a body moves relatively to us, so the time distances always grow longer; in other words, the clocks run slower as the rods get shorter. Now one might suppose that these apparent differences in the space and time magnitudes of systems moving relatively to one another would be merely apparent; in which case it would be quite understandable that my inches might look to you shorter than yours and that your inches might look to me shorter than mine. From which we should conclude that the relative motion of two persons produced a sort of perspective aberration in the appearance of each to the other. My inches wouldn't *be* shorter than yours while yours *were* also shorter than mine; they would only *look* so. In any event this path of escape seems to be spurned by the Relativists, at least in the case of Time. For we are told by Professor Eddington that if a person could step onto the magic carpet described in the old fairy tale and travel with almost the velocity of light to the star Arcturus, he would be, let us say, only a half-hour older when he reached his goal than he was when he set out. Yet from the point of view of us who were left behind, something like two hundred years would have elapsed. And again Professor Herman Weyl confirms this amazing application of Einstein to physiology by the more moderate supposition that if there are twin brothers one of whom stays at home while the other travels abroad for a few years at a speed approximating that of light, this latter brother, when he returns, will look perceptibly younger than the twin who remained behind. This would follow from the fact that the molecules of our bodies, whose rhythmic changes determine the ageing or passing of our lives, are natural clocks and like all clocks they must slow down when our bodies move. But if our molecular processes slow down then the atrophying of glands and muscles and the hardening of arteries proceed more slowly,—in short we grow old more slowly.

In spite of the attractiveness of this hypothesis, I do not believe that it is true. In a Lorentzian world in which motion was ab-

solute we might hope that the same ether which shortens the spaces of moving bodies would also lengthen their times and slow down such of their processes as took place in the direction of their motion. In that case all very speedy travellers would appear to us not only fore-shortened or flattened but also rejuvenated in that one of their dimensions which they had chosen for the direction of their journey. But in the other two dimensions they would be as large and as old as if they had never moved. In an Einsteinian world however, in which there is no ether and no absolute motion, I cannot see how even a linear rejuvenation could occur. To appreciate the difficulty involved, let us take a second look at Professor Weyl's twins one of whom travels and the other does not. Suppose that the stay-at-home brother should feel piqued by the youthful appearance of the other who has returned from abroad. He would only have to remember that all motion is relative and that consequently he had a perfect right to regard himself as the traveller and his brother as having remained stationary. In that case it would be *he* who looked and really *was* younger. Now not even in an Einsteinian world would it be possible for two brothers, especially twins, each to be a few years younger than the other. That could happen only in a universe in which all squares were round and the *principio contradictionis* had been put to sleep.

This puzzle, it may be noted, is touched upon by Eddington though not, so far as I have discovered, by Weyl. Eddington solves it—rather lamely as it seems to me—by forbidding his traveler to Arcturus ever to return to earth and debate as to who really did the travelling, on the ground that the awkward situation thus created would be *asymmetrical*. But one would suppose that two people each of whom was younger than the other would suffer from an excess of symmetry rather than from a lack of it.

IV. The Crucial Assumption Contained in Einstein's Premises.

Now it may be that all of the apparently paradoxical consequences of the Special Theory of Relativity are susceptible of a

self-consistent explanation, but before accepting a conclusion so revolutionary as that of Einstein, common-sense would seem to dictate a most careful re-examination of the premises by which that conclusion is supported. To this examination we now proceed.

The argument, as I understand it, can be stated as follows:

If, first, we accept the old assumption that the velocity of light *in vacuo* is unaffected by the velocity of its source, and if, secondly, we accept as correct the negative results of the Michelson-Morley experiment, then, thirdly, we *must* accept as a necessary conclusion either Einstein's theory or some highly complex form of the Lorentz theory.

Now the results of the Michelson-Morley experiment are too well attested to permit of a reasonable doubt as to their correctness. Whatever escape there may be from the conclusion depends solely on the other premise: *viz.*, the assumption that the velocity of light is unaffected by the velocity of its source. The evidence for the truth of this assumption is meager, at least in comparison with the tremendous weight of the conclusion which rests upon it. It is in the first place a kind of hold-over from the days of the ether. Ships moving through the ocean send their backward-going waves from the stern as fast as their forward-going waves from the bow. It is the same with sound-waves in the air. In general, the velocity of waves in a medium depends entirely upon the structure of the medium, its density and elasticity, and not a bit upon the velocity of the body that sends them. Consequently if luminous bodies move through an ocean of ether we should expect that their light waves would behave like other waves. But now that Einstein has abolished the ether there seems no reason to saddle the new light with the disabilities of a medium that no longer exists. The situation reminds us of the anomalous procedure of David Hume who continued to regard sensory objects as states of mind after he himself had abolished the mind whose states they were. When old postulates are abandoned their implications are at least open to question, and if they are to be retained at all they must be newly substantiated. Einstein's position seems to be that though there is no motionless ether such as

Lorentz and his predecessors believed in, yet light-waves must be assumed to behave in relation to the velocity of their source as if there were such a medium. What is the alternative to this crucial assumption?

We can not suppose that light is made up of corpuscles emitted by bodies as they move, for light is in almost all respects wave-like rather than corpuscular. Nor can we suppose that the earth and all other bodies push and drag along with them a portion of the ether-ocean in which they move, for we find no trace of the whirlpools and other disturbances which would be produced by the collision of these moving ethers. To find a tenable alternative to Einstein's assumption we must, I think, look in a slightly different direction. As such an alternative I propose the theory *that the medium or carrier of light waves is not a doubtfully existent ether-substance but the certainly existent field of force which each proton and electron carries with it.* As each of these fields extends in all directions and without limit, it inter-penetrates every other field, and thus space must be thought of as filled with infinite spheres of force, *macro-monads,* each of which contains all the others. Now because these fields are centered in their particles it follows that when a particle moves, its field must move with it. What will be the velocity of waves emanating from a particle under these conditions? Their velocity will be compounded of the velocity *in* the field and the velocity *of* the field. The velocity *in* the field will be constant and absolute, equal to 186,000 miles a second. The velocity *of* the field that carries the undulations will be variable and relative; for the velocity of the field will be the same as the velocity of the particle which is its nucleus and center, and the velocity of a particle is variable and can be measured relatively to any other particle.

If this alternative to Einstein's assumption is true then the negative results of the Michelson-Morley experiment are exactly what we should expect. There is in them no mystery whatever, and there is no need to subject our traditional Newtonian mechanics either to a Lorentzian reform or to an Einsteinian revolution.

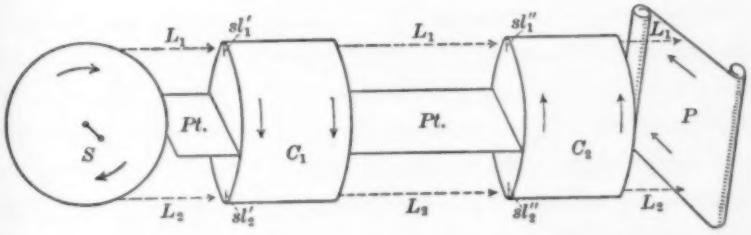
And now I wish to describe to you an experiment which if it

can be carried out will settle the main point at issue definitely and once for all.

V. The Experiment Designed to Test the Crucial Assumption.

Is the velocity of light affected by the motion of the body from which it comes, or is it, as generally supposed, quite independent of the velocity of its source? That is the question, and here is the experiment I propose.

A steel sphere one foot in diameter is mounted on a horizontal axle running through its center. (See Figure below.) The



Diagrammatic Model of Apparatus for Proposed Experiment.

The sphere, S, rotating in the direction indicated by the arrows, sends out from its upper and lower halves light beams, L_1 and L_2 which, separated by the partition Pt pass through, respectively, slits, Sl_1' and Sl_2' in the first cylinder C_1 which is rotating clockwise, and through the slits Sl_1'' and Sl_2'' in the second cylinder, C_2, which is rotating counter-clockwise; registering separately upon the sensitive paper, P, which is moving in the direction indicated by the arrows.

The whole is enclosed in a tunnel.

sphere is wound with steel or platinum wires which are heated until they become luminous by an electric current passing through them. The sphere revolves on (or with) its axle 263 times a second. The points on its upper and its lower surfaces respectively will thus be moving with equal and opposite velocities of about 833 feet a second. From the upper and lower surfaces there will be given off two parallel sets of light rays which will be kept separate from each other by a thick horizontal partition 264 feet or one-twentieth of a mile in length and extending forward from the middle of the

sphere and in the direction in which the upper half of it is moving. Directly in front of the sphere is a steel cylinder 3 feet long and 3⅐ feet in circumference with its end-planes perpendicular to the light coming from the sphere. In this cylinder are two slits one inch long and 1/250 of an inch in width. At the other end of the partition 264 feet away is another cylinder in line with the first and having the same dimensions. This second cylinder also has two opposite slits of the same length and width as those on the first cylinder. Just behind this further cylinder is a sheet of sensitive photographic paper slowly moving from left to right. The whole apparatus is enclosed in a tunnel and the cylinders are set rotating, the one clockwise, the other counter-clockwise, and at velocities gradually increasing to that of the sphere, that is to say 263 times a second. This means that any point on the circumference of one cylinder will have a velocity of 2 x 833 or 1,666 feet a second relative to any point on the other cylinder, so that the corresponding slits on the two cylinders will be opposite one another for 1/5,000,000 of a second. It will take the light from the sphere a little longer than this (*i.e.*, about 1/3,720,000) to pass over the one-twentieth of a mile that separates the cylinders. Consequently if the cylinders are gradually speeded up there will come a time when the two sets of light rays will cease to make a record on the sensitive paper.

Now, if Einstein is right, the two sets of light rays will disappear simultaneously; but if Einstein is wrong, the lower set will disappear before the upper set. For we must remember that the lower set of light waves will be emanating from the bottom of the sphere which has a backward velocity of 833 feet a second, while the upper light rays will be sent from the top of the sphere which has a forward velocity of 833 feet a second. The two sources of light will thus have a difference in their velocities of 1,666 feet a second, and the experiment should tell us whether this difference in the velocities of the sources of light results in a difference in the velocities of the light itself.

For the past fifteen years I have been discussing with Professor

Bergen Davis and other members of the Physics Department at Columbia an experiment like the one I have described except that disks instead of cylinders were to have been used. But until very recently there seemed to be no way to meet one of the objections which Professor Davis advanced. Why should not the light-rays after passing through the slits in the first disk spread out in such a way as always to pass through the second slits, whether or not they were directly in line? This objection, it was urged, could not be met except by placing a third disk with similar slits but fixed and not rotating, in front of the further of the two revolving disks and then synchronizing the latter so perfectly that their corresponding slits would come opposite to one another only when they were in line with the slits in the fixed disk. Now it is very doubtful if any such degree of synchronization of bodies rotating so fast and at such a distance would be possible. To meet this objection it recently occurred to me that the two disks should be made thick like grind-stones or cylinders so that the only light that could get through would be that which travelled perpendicularly to the planes of their ends. This does away with the need of synchronizing because the slits in the upper halves are bound to be opposite each other *somewhere* twice in each revolution; and of course the same applies to the lower halves. And it does not matter what the angular position of the slits when they cross each other, or how that position may vary through variation of rotational velocity. For the revolving sphere will send off rays in all planes so that at whatever angle the slits may choose to cross some light will be there ready to shoot through. The light from the more slowly moving regions adjacent to the poles of the horizontal axis of the sphere could safely, and should probably, be blocked off from entering the slits and the tunnel.

Whether or not the sphere and the cylinders can be sufficiently speeded up to make the two sets of light waves disappear; and whether, secondly, the centrifugal force resulting from such a degree of speed would not make the heat-softened wires on the sphere fly to pieces; and whether, thirdly, the hypothetical differ-

ence in the speed of the two sets of light-rays would be sufficient to produce an observable difference in the intensity of the upper and lower impressions on the sensitive paper, are questions that can best be settled by trial.[1]

The cost of the experiment might run to $20,000. Philosophers are supposed to pray only on rare occasions and it may be that for that very reason the gods take special heed of their appeals. Perhaps some of you will be willing to pray that there be sent to me a kind-hearted rich man who will take a sporting chance and put up the necessary funds to try this thing out.

There are of course various modifications of my experiment which might be tried, if in its primary form it proved impracticable. In place of light from our luminous sphere we might use the light from the sun at sunrise when we are rotating toward it and again at sunset when we are rotating away from it. This would, however, require an absolute and very precise measure of the velocity in each case instead of the detection of a mere difference-effect. Or again, as suggested by two of my colleagues, we might use the light from the opposite edges of the revolving sun, in which case a mere difference-effect would suffice. There would be, however, the chance that in using extra-terrestrial rays of light any difference in their velocities might be evened up when they entered the part of space in which the fields of earthly particles were stronger than those of the particles from which they originated.[2]

The use of mirrors would simplify these experiments and would

[1] This last objection is I think far more serious than the others. The intensities of the two sets of light rays when they have scraped through their respective pairs of slits will, as I calculate it, differ only in the ratio of 200 to 199. It may well be that this difference is too small to be detected on the paper. In that case the dimensions of the apparatus would have to be extended. The length of the tunnel might be increased ten-fold, that is, from a twentieth of a mile to a half mile. This drawback would be partly compensated for by the increase which we could then make in the width of the slits from $\frac{1}{250}$ to $\frac{1}{25}$th of an inch. In that case, although both sets of light waves would be fainter, we should only have to detect a difference of one part in twenty instead of one part in two hundred. But nevertheless I am very much worried over this difficulty. It may be fatal.

[2] This possibility would also seem to detract from the conclusiveness of certain experiments of similar intent to mine made by De Sitter and others on double stars, of which a friend has just informed me.

reduce them to modifications of the Fizeau or Foucault methods of light-measurement. But there is a bare possibility that the difference in the velocities of the light impinging on the mirror might be neutralized in the process of being reflected. This danger would also militate against a suggestion made by another colleague that my revolving sphere should be illuminated by arc-lights from above and below.

VI. The Nature of the Alternative to the Special Theory of Relativity.

Before closing this discussion of the Special Theory of Relativity I should like to return to a consideration of the alternative to that theory which it is possible that the experiment I have been describing might justify. The conception that the vehicle of light-undulations is the field of force of which the vibrating particle is the nucleus possesses a peculiar status intermediate between the old theory of Absolute Motion in an absolute space and the new theory of Relativity.

What really counts in the motion of anything is not its change of position in a supposed absolute space, nor is it on the other hand its merely relative change of distance from any and every other object. The most significant thing about motion is *the relation of the moving body to its own past,* or what is much the same thing, *the relation of what moves to the source from which the motion originated.* "Auto-absolutism," or "intra-relativism" are words which might serve to express my meaning. Let me illustrate. Suppose two planets are approaching each other in otherwise empty space. You take a position on one of these bodies, I will take mine on the other. There is, perhaps, no meaning in asking whether I am moving toward you or you toward me. We see only that we are approaching. Let us each arrange on our respective planets to have a number of marbles capable of rolling freely in level grooves parallel with the line of our motion, and let us suppose that our approach is varied by successively equal spurts of uniform acceleration, not like gravitational accelerations which act equally on all particles but like those which would be produced by the recoil of a cannon fixed in the

ground and discharging projectiles in the direction from which the planet had moved. We should very soon be able to divide these spurts into two or three kinds: there would be the spurts in which my marbles rolled backward and yours didn't, and the other spurts in which yours rolled backward and mine didn't, and perhaps also a third case in which both sets of marbles rolled backward. The velocity with which the marbles roll in their grooves will measure the difference between the present and the past states of our motions. The change in my state when my marbles rolled would be an intrinsic and vital change, altering the relative position of objects in my system. When your marbles rolled, although my rate of approach to you would be equally accelerated, the change would not be vital or intrinsic to me. We have then to distinguish between accelerations that are intrinsic or intra-relative, felt as well as seen, and those that are extrinsic or relative in the ordinary sense, and which are seen but not felt. Is this difference to be explained by an appeal to an absolute velocity in absolute space? Certainly not; because, assuming for the moment that such a space exists, we can see its irrelevance by imagining that all the particles of matter on our two planets are moving together with respect to the fixed points of this absolute space in any direction, at any rate of velocity, and with any degree of acceleration. In no such case would any of the phenomena associated with the rolling of the marbles be affected.

We see then that what counts in acceleration is neither the change with reference to an absolute space nor the change with reference to bodies outside the system and unconnected with it. What does count in acceleration is the change of parts of a system with reference to one another; and this "intra-relative" change is at the same time "auto-absolute," *i.e.*, a register of the difference between the past and the present states of the system as a whole. When your planet was accelerated toward mine in such a way that your marbles seemed to roll backward with uniform velocities, they registered in their apparent backward motion the differentiation of your present state from your past.

But now you may object that even if this intermediate conception is intelligible at all it applies only to acceleration and not to

velocity. To which I should reply that every velocity of translation has been born at some time or other of an acceleration. And if the motion of a body has originated within the system its rate of uniform velocity will measure the acceleration which gave it birth. And that acceleration was an intrinsic change.

Suppose we stand at the center of a circular platform and suppose we are ignorant as to whether it is rotating or not, we can settle our doubts by rolling marbles out along a radius of the platform. If the platform is at rest the marbles will continue to roll on the radius along which they started but if the platform is rotating they will undergo increasing changes of longitude as they roll. This will have nothing to do with centrifugal force because the change of radial direction on the part of the marbles will—disregarding friction—be independent of their masses. An imponderable shadow, if there were any way to shoot it out free of us, would register the same curve as would a mass as great as our entire platform. Here, as in the case of the planets, the outward-rolling marble would register our (angular) state at the moment in the past when its movement started. And we could thus use our own past, preserved in the path of the marble, as a standard with reference to which the amount of our intrinsic change could be measured.

Now finally there are two difficulties and very grave ones with which such a conception as I am defending is confronted. There is first the difficulty of how to interpret the evidence from electrodynamics which points to the velocity of light as an absolute maximum. It would seem that in maintaining that the fields of force in which light moves are themselves in motion I had come into conflict with a body of physical doctrine much older than the Einstein Theory.

As a possible way of meeting this difficulty I suggest that the velocity at which the mass of a particle would become infinite, and which for that reason is regarded as a maximum, might be interpreted and measured in the manner that I have called intra-relative or auto-absolute. It might well be that there was a limit to the amount to which we could increase the velocity of a body relative to the system in which the increase was caused. The effort ordi-

narily required to change a body's velocity increases as the square of the velocity. Thus the energy involved in changing 2 units of mass from 4 feet a second to 5 feet a second is $\frac{1}{2}2 \times 5^2 - \frac{1}{2}2 \times 4^2 = 9$. And to change the velocity of the same mass from 9 feet a second to 10 feet a second requires $\frac{1}{2}2 \times 10^2 - \frac{1}{2}2 \times 9^2 = 19$ units of energy. But please observe that if this formula is to be valid the velocities must always be measured intra-relatively, that is to say with reference to the source of the change. If a body is moving 9 feet a second, relatively say to the fixed stars, and if we also are moving along beside it at that same rate, then it will take only one unit of effort from us to increase its velocity from 9 to 10 feet a second. In short the velocity imparted to a body so far as it is relevant to its energy is never to be measured relatively to the fixed stars or to absolute space or to any outside body, but must always be measured relatively to the source of the change. Now if this elementary formula for the amount of energy required to increase a velocity has to be interpreted in this intra-relative fashion, why might not the more complex rules derived from electro-dynamics be interpreted in the same way? We could then admit that an infinite effort would be required to impart to a particle a velocity equal to that of light relative to us who imparted it, and at the same time refuse to admit any limit to the velocity at which a body could move relatively to anything unconnected with its source. This would mean that an alpha particle might be discharged from a star that was itself moving in the same direction at a very high velocity, and then that a beta particle could be discharged from the alpha particle again in the same direction and with a velocity relative to its source of 99/100 the velocity of light. The beta particle would then be moving well beyond the velocity of light with reference to the *original* source. In short a system of *rockets within rockets* could be devised which could seemingly produce by successive steps any degree of velocity whatever.

If it is asked what would happen not at the *source* but at the *terminal*, if a body moving with one of these super-velocities should crash into another system, we might counter with the question as to what would happen *now* if two beta particles moving at

9/10 the velocity of light should collide head on, lock horns, and so be prevented from getting relief through rebounding. It would seem rather a frail protection from such a cataclysm to say that the clocks on each would from the standpoint of the other be running slow.

The second of the grave difficulties with which my hypothesis is confronted is the empirical evidence which seems to confirm the Einstein Theory, a part of which its author to his everlasting credit was able by his deductions to predict. The empirical facts to which I refer are as you know: (1) The bending of lightwaves by gravity to a degree double that to be expected on Newtonian assumptions; (2) The rotation of the elliptic orbits of planets, illustrated to an observable extent in the case of Mercury; (3) The lessened frequency of light waves issuing from strong gravitational fields, manifested in a shift of spectrum lines toward the red.

The first and second of these Einsteinian deductions have been sufficiently verified to satisfy most physicists, and the third, sufficiently to satisfy some.

As to the second and third I will only point out that, on the alternative theory that I am defending, the whole field of a particle as well as the particle itself should be subject to gravity, and that the resulting slight apparent modification in the Newtonian law might be of the kind and extent needed to account for the facts in question. In the case of Mercury the phenomenon would be due not to the falsity of the Newtonian law itself but to the unsuspected presence between the sun and Mercury of the *quasi-matter* of the solar and Mercurial *fields*.

As to the first and most striking of Einstein's deductions, the bending of the light rays from the stars by the sun's gravitational field, the situation is perhaps a little clearer. If light travels in and with respect to the field of its source rather than in and with respect to either an empty space or stationary ether, we should expect that such light would undergo the same double gravitational deviation that was predicted and observed. For in the first place, the field of force would be attracted by gravity and bent in toward the sun, and in the second place the light waves themselves,

constituting as they do a kind of transitory matter capable of exerting pressure, would be attracted on their own account. And *rays* that were deviated in a *field* that was also deviated would give the same double deviation that was called for by Einstein.

CONCLUSION.

And now at last I will say a word as to the character of that General Theory of Relativity, for the appreciation of which some understanding of the Special Theory is essential.

It is not, I think, too inaccurate to say that while the Special Theory reduces geometry to physics and is offensively destructive and phenomenalistic in its conception of the world, the General Theory reduces physics to geometry and its tone and temper are rationalistic and constructive. The muddy prose of Hume and Mach gives place to the clear poetry of Riemann and Clifford.

The General Theory, as its name might indicate, was developed by Einstein as an extension of his formulæ for calculating the conditions on one moving system from the standpoint of another. From the special case in which the systems are in uniform or unaccelerated relative motion the formulæ were generalized to include cases in which systems are moving relatively and with accelerated motions. But bodies moving with accelerated velocities are subject to forces, hence the later Einstein theory consists, first, of a new though Cliffordian conception of the nature of *force;* and, second (growing out of that), of a new though Riemannian conception of the *universe itself,* as a domain at once boundless and finite. It was Clifford, working under the inspiration of the new geometry of Riemann, who, I think, first suggested that matter could be conceived as a non-Euclidian wrinkle in space. Put more generally: the same spatial medium which to a being measuring his movements according to Euclid would appear as filled with accelerative forces, would for a being who measured his motions according to Riemann be quite empty, though wavy. This means that if we replace Euclidian with non-Euclidian measures, we can substitute for the old dynamic conception of forces in a space of zero curvature the new and purely geometrical con-

ception of just space but of many and varying curvatures. And if a field of force can be thought of as a continuously varying curve or 'hill' in space then the material particle at its center can be conceived as the unattainable peak of such a hill. It is pleasant to think that Clifford, whose mind was of such rare beauty and who in his appreciation of spiritual values possessed what the musicians call a sense for absolute pitch, should have been the first to hold a conception which now seems destined to have most far-reaching consequences.

Notwithstanding the fact that Einstein reasoned from the General Theory to the Special Theory, I do not believe that the truth of the latter logically necessitates the truth of the former. The essence of the General Theory is, I think, quite compatible with the alternative to the Special Theory which I have defended. Nor can I feel, as some interpreters of Einstein apparently do feel, that the category of *force* is disgraced or annihilated by being expressed as a curve in space. Curves themselves were not annihilated when expressed as numerical equations. And Einstein's geometry of mechanics no less than Descartes's algebra of geometry should be celebrated as the fertile marriage of two categories rather than as the funeral of one.

As to the value of the second great claim of the General Theory to give us a universe that is self-contained like a closed curve, in place of our old world that straggled so inordinately through the endless wastes of Euclidian space,—opinions will be varied and emotions mixed. Some will undoubtedly feel stifled and penned in at the thought that if they were to travel in a 'straight' line for only a few septillions of miles they would find themselves on the way home without ever having turned around. Others will find the new Riemannian hyper-sphere large enough for all practical purposes; and they will delight in the possibility of relating in some curious way the curvature or size of the universe as a whole to the dimensions of its minimum elements. For this would take us to that climax of rationalist aspiration in which even the arbitrary and existential constants of physics would be reduced to a crystalline precipitate of purely subsistential mathematical relations.

But I have already gone too far in these hints as to the fairy-land that may now be opening for science and philosophy. If anyone is stirred by the errors of my essay to say well the kind of thing I have tried to say, handicapped by ignorance, I shall be happy. For it is time that we in philosophy should go back to Nature, no matter how steep the path or how hard we fall.

WM. PEPPERELL MONTAGUE.

COLUMBIA UNIVERSITY.

PROCEEDINGS OF THE EASTERN DIVISION OF THE AMERICAN PHILOSOPHICAL ASSOCIATION: THE ANNUAL MEETING, BROWN UNIVERSITY, DECEMBER 27, 28 AND 29, 1923.

THE annual business meeting was called to order at 11.30 A.M., December 29, President Montague being in the chair. Professor W. H. Sheldon reported for the auditors that the Treasurer's accounts were examined and no error found. The Treasurer's report was accepted.

ANNUAL REPORT OF THE TREASURER, DEC. 20, 1923.

Receipts.

From previous Treasurer (checking account)	$282.72	
From Princeton Bank and Trust Co. (time account)	135.67	
Dinner receipts (1922)	303.00	
From Com. on International Coöp. (unexpended balance)	28.65	
Dues collected	259.90	
Interest on bonds	8.50	
Total		$1018.44

Disbursements.

Annual dinner (1922)	315.00	
Printing (1922)	33.00	
Stenographic service (1922)	9.76	
Expenses defrayed by Secretary (1922)	51.48	
Dues, Am. Council of Learned Societies	25.00	
Bills submitted by Com. on International Coöp	165.00	
Reprints of Proceedings (1922)	55.66	
Printing	26.75	
Stamps and stamped envelopes	20.85	
Clerical assistance	17.25	
Deducted by bank	3.00	
Supplies	.65	
Total		$723.40
Balance on hand		295.04
Assets other than cash, 2 U. S. registered bonds		200.00

The following persons, recommended by the Executive Committee, were elected to membership in the Division: S. McClellan Butt, Lawson P. Chambers, Lucy S. Crawford, C. J. Ducasse, Joseph Roy Geiger, Marjorie S. Harris, Cornelius Francis Kruse, Margaret W. Landes, Lewis Trenchard More, Elizabeth V. Nagy, F. C. Northrop, J. H.

Randall, Jr., A. P. Savides, Arthur G. Sellen, J. A. Sharrard, Harold M. Smart, W. S. Taylor, Harry Austryn Wolfson, active members; B. Malcolm Harris, associate member.

The Executive Committee presented nominations for President, and a ballot was taken, as a result of which Dr. Alexander Meiklejohn was declared elected. This election was made unanimous. The Executive Committee presented the further nominations: Vice-President, Professor George P. Adams; Members of the Executive Committee for three years, Professor R. B. Perry and Dr. Helen Parkhurst; Member of the Executive Committee for two years, to fill the vacancy due to resignation of Professor A. S. Ferguson, Professor Harvey G. Townsend. It was voted that the Secretary cast one ballot for these officers.

The Secretary read the report of Professor J. H. Tufts, Chairman of the Joint-Committee of the Eastern and Western Divisions, recommending that the next lecturer on the Carus Foundation be Professor J. E. Creighton of Cornell University. It was voted that this recommendation be approved by the Eastern Division, and that the report as a whole be received and placed on file.

The report of the Committee on International Coöperation was presented by Professor A. C. Armstrong, Chairman. Concerning funds previously appropriated for foreign relief, and not so far expended, the committee requested authority to expend these in connection with the Emergency Society for German and Austrian Science and Art, that Society to care for the Journals, our committee to donate books. It was voted that this authority be given. The committee presented also the need of Japanese universities and scholars for books and journals, and recommended a new appropriation of $75 toward this need. It was voted that the Executive Committee be authorized to appropriate and place in the hands of the Committee on International Coöperation for this purpose any amount which they might decide after reviewing the finances of the Division.

The report further summarized the informal inquiry abroad which the committee had made concerning the possibility of holding an international congress of philosophy in 1925. It was voted that the Division approves the idea of holding an international congress of philosophy in America, and authorizes the Committee on International Coöperation, at their discretion and in consultation with the Executive Committee, to proceed with the formulation of plans.

The President reported to the meeting that the Executive Committee had authorized him to appoint two additional members to the Committee on International Coöperation, and that President Butler of Columbia University and President Hibben of Princeton University had accepted such appointment. The Executive Committee recommended that Professor Montague also be added to this Committee. It was so voted.

It was voted that the thanks of the Division be sent to Professor Aliotta for his courteous invitation to the International Congress of Philosophy to be held at Naples, May, 1924. The President was empowered to appoint delegates to this Congress, and to any other congress or celebration at which, in the opinion of the Executive Committee, the Division should be represented.

It was voted that the thanks of the Division be extended to our foreign colleagues who have aided in the inquiry concerning the congress proposed for 1925, in particular to Professor Tauro (Rome), Professor Wildon Carr (London), and M. Xavier Léon (Paris).

The Executive Committee was empowered to determine the place and time of the next meeting of the Division.

The meeting adjourned with a vote of thanks to the President and Corporation of Brown University, and to Professor and Mrs. Everett, for the hospitality extended to the Division.

C. I. Lewis,
Secretary.

Officers of the Division: President, Alexander W. Meiklejohn; Vice-President, George P. Adams; Secretary-Treasurer, C. I. Lewis; Executive Committee, the above and J. E. Creighton (1924), J. A. Leighton (1924), Edna A. Shearer (1925), Harvey G. Townsend (1925), Helen Parkhurst (1926), R. B. Perry (1926), and W. P. Montague, *ex officio*. Special Committees: International Coöperation, A. C. Armstrong, Chairman; Joint-Committee of the Eastern and Western Divisions, J. H. Tufts, Chairman.

LIST OF MEMBERS.

Adams, Professor George P., Univ. of California, Berkeley, Cal.
Adler, Professor Felix, Columbia Univ., New York.
Aikins, Professor H. A., Western Reserve Univ., Cleveland, Ohio.
Albee, Professor Ernest, Cornell Univ., Ithaca, N. Y.
Alexander, Professor H. B., Univ. of Nebraska, Lincoln, Neb.
Ames, Professor E. S., Univ. of Chicago, Chicago, Ill.
Angier, Dr. R. P., Yale Univ., New Haven, Conn.
Apple, President Henry H., Franklin & Marshall College, Lancaster, Pa.
Armstrong, Professor A. C., Wesleyan Univ., Middletown, Conn.
Avey, Dr. Albert E., Ohio State Univ., Columbus, Ohio.
Ayres, Professor C. E., Amherst College, Amherst, Mass.
Bakewell, Professor C. M., Yale Univ., New Haven, Conn.
Baldwin, Professor J. M., Care of Harris Forbes & Co., New York.
Balz, Professor Albert, Univ. of Virginia, Charlottesville, Va.
van Becelaere, Rev. E. L., Convent of the Visitation, Georgetown, Ky.
Bennett, Professor C. O., Yale Univ., New Haven, Conn.
Black, Dr. G. A., 156 Park St., Gardiner, Mass.
Boas, Professor George, Johns Hopkins University, Baltimore, Md.
Bode, Professor B. H., Ohio State Univ., Columbus, Ohio.
Boodin, Professor J. E., Carleton College, Northfield, Minn.
Bowman, Professor A. A., Princeton Univ., Princeton, N. J.
Brandt, Professor Francis B., 4337 Larchwood Ave., Phila, Pa.
Brett, Professor G. A., Toronto Univ., Toronto, Canada.
Brightman, Professor Edgar S., Boston Univ., Boston, Mass.
Britan, Professor Halbert H., Bates College, Lewiston, Me.
Brogan, Dr. A. P., Univ. of Texas, Austin, Texas.
Brown, Dr. H. C., Leland Stanford Univ., Palo Alto, Calif.
Brown, Professor Wm. A., Union Theol. Seminary, New York.
Bryan, President W. L., Indiana Univ., Bloomington, Ind.
Buchner, Professor E. F., Johns Hopkins Univ., Baltimore, Md.
Bush, Professor Wendall T., Columbia Univ., New York.
Bussey, Professor Gertrude C., Goucher College, Baltimore, Md.
Butler, President N. M., Columbia Univ., New York.
Butt, Dr. S. McClellan, Princeton Univ., Princeton, N. J.
Calkins, Professor Mary W., 22 Bellevue St., Newton, Mass.
Campbell, Professor Gabriel, Dartmouth College, Hanover, N. H.
Campbell, Professor Ivy G., Wells College, Aurora, New York.

Case, Professor Mary S., Wellesley College, Wellesley, Mass.
Castro, Dr. Matilde, Bryn Mawr College, Bryn Mawr, Pa.
Cattell, Professor J. McKeen, Garrison-on-Hudson, New York.
Chambers, Dr. Lawson P., Cornell Univ., Ithaca, N. Y.
Chandler, Dr. Albert R., Ohio State Univ., Columbus, Ohio.
Chanter, Professor William G., Wesleyan Univ., Middletown, Conn.
Chao, Dr. Yuen Ren, 3 Sacramento Place, Cambridge, Mass.
Chidsey, Professor Harold, Union College, Schenectady, N. Y.
Coe, Professor George A., Teachers' College, Columbia Univ., New York.
Cohen, Professor M. R., College of the City of New York, N. Y.
Cooke, Dr. R. B., Portland, Maine.
Coss, Professor J. J., Columbia Univ., New York.
Costello, Professor H. T., Trinity College, Hartford, Conn.
Cox, Professor George C., 128 North Mountain Ave., Montclair, N. J.
Craig, Dr. Wallace, Huntington Hosp., Boston, Mass.
Crane, Professor E., Wilson College, Chambersburg, Pa.
Crawford, Professor J. F., Beloit College, Beloit, Wisconsin.
Crawford, Professor Lucy S., Sweet Briar College, Sweetbriar, Va.
Creighton, Professor J. E., Cornell Univ., Ithaca, New York.
Crooks, Professor Ezra B., Delaware University, Newark, Del.
Cross, Professor George, Rochester Theol. Seminary, Rochester, N. Y.
Cunningham, Professor G. W., Univ. of Texas, Austin, Texas.
Curtis, Professor M. M., Western Reserve Univ., Cleveland, Ohio.
Cutler, Professor Anna A., Smith College, Northampton, Mass.
Daniels, Professor Arthur H., Univ. of Illinois, Urbana, Illinois.
Dashiell, Professor J. F., Univ. of North Carolina, Chapel Hill, N. C.
Dearborn, Professor G. V. N., Cambridge 38, Mass.
Demos, Dr. Raphael, Harvard Univ., Cambridge, Mass.
Dewey, Professor John, Columbia Univ., New York.
Doan, Professor F. C., Summit, New Jersey.
Dodge, Professor Raymond, Wesleyan Univ., Middletown, Conn.
Dolson, Dr. Grace N., St. Mary's Convent, Peekskill, N. Y.
Dotterer, Professor Ray H., Pennsylvania State College, State College, Pa.
Doxsee, Professor Carl W., Penn. College for Women, Pittsburgh, Pa.
Drake, Professor Durant, Vassar College, Poughkeepsie, N. Y.
Ducasse, Professor C. J., Univ. of Washington, Seattle, Wash.
Duncan, Professor George M., Yale Univ., New Haven, Conn.

Dunham, Dr. James H., The Temple Univ., Philadelphia, Pa.
Dunlap, Professor Knight, Johns Hopkins Univ., Baltimore, Md.
Eaton, Dr. R. M., Harvard Univ., Cambridge, Mass.
Edman, Dr. Irwin, Columbia Univ., New York.
Elkus, Professor Savilla A., 24 West 96th St., New York.
Eno, Mr. Henry Lane, Princeton, New Jersey.
Everett, Professor Walter G., Brown Univ., Providence, R. I.
Ewer, Professor B. C., Pomono College, Claremont, California.
Faris, Professor Ellsworth, Univ. of Chicago, Chicago, Illinois.
Ferguson, Professor A. S., Queen's Univ., Kingston, Canada.
Fisher, Dr. D. Warren, Dartmouth College, Hanover, N. H.
Fite, Professor Warner, Princeton Univ., Princeton, N. J.
Fletcher, Professor O. O., Furman Univ., Greenville, S. C.
Flewelling, Professor Ralph T., University of Southern California, Los Angeles, Calif.
Forbes, Professor G. M., Univ. of Rochester, Rochester, N. Y.
French, Professor F. C., Colgate Univ., Hamilton, N. Y.
Fuller, Mr. B. A. G., Harvard Univ., Cambridge, Mass.
Fullerton, Professor G. S., Care of Credit Suisse, Geneva, Switzerland.
Furry, Dr. W. D., Shorter College, Rome, Georgia.
Gamble, Professor Eleanor A. McG., Wellesley College, Wellesley, Mass.
Gardiner, Professor H. N., Smith College, Northampton, Mass.
Geiger, Professor Joseph R., College of William and Mary, Williamsburg, Va.
Gifford, Professor A. R., Univ. of Vermont, Burlington, Vt.
Gilbert, Dr. Katherine E., Trinity College, Durham, N. C.
Gillet, Professor A. L., Hartford Theol. Sem., Hartford, Conn.
Given, Professor P. L., Wesleyan Univ., Middletown, Conn.
Gore, Professor Willard C., Univ. of Chicago, Chicago, Illinois.
Griffin, Professor E. H., Johns Hopkins Univ., Baltimore, Md.
Guthrie, Professor E. R., Univ. of Washington, Seattle, Washington.
Guthrie, Dr. Kenneth S., 292 Henry St., New York.
Hammond, Professor W. A., Cornell Univ., Ithaca, N. Y.
Harris, Dr. Marjorie S., Randolph-Macon College, Lynchburg, Va.
Hartman, Professor Henry G., Univ. of Cincinnati, Cincinnati, Ohio.
Hawes, Professor R. P., Goucher College, Baltimore, Md.
Hendel, Dr. Charles W., Princeton Univ., Princeton, N. J.
Henderson, Professor Ernest N., Adelphia College, Brooklyn, N. Y.

Henke, Professor Frederick G., Allegheny College, Meadville, Pa.
Hibben, President J. G., Princeton Univ., Princeton, N. J.
Hill, President A. Ross, Univ. of Missouri, Columbia, Mo.
Hitchcock, Dr. Clara M., 1923 East 71st St., Cleveland, Ohio.
Hite, Professor L. F., New Church Theol. Sch., Cambridge, Mass.
Hocking, Professor W. E., Harvard Univ., Cambridge, Mass.
Hoffman, Professor Frank S., 216 West 72d St., New York.
Hollands, Professor E. H., Univ. of Kansas, Lawrence, Kansas.
Holmes, Professor Jesse H., Swarthmore College, Swarthmore, Pa.
Horne, Professor H. H., 341 Summit Ave., Leonia, N. J.
Howes, Dr. Ethel P., Scarsdale, N. Y.
Hudson, Professor J. W., Univ. of Missouri, Columbia, Mo.
Hughes, Professor Percy, Lehigh Univ., South Bethlehem, Pa.
Hume, Professor J. G., Univ. of Toronto, Toronto, Canada.
Husik, Professor Isaac, Univ. of Pennsylvania, Philadelphia, Pa.
Hutcheson, Professor R. J., Meadville Theol. School, Meadville, Pa.
Johnson, Professor George, Lincoln University, Pa.
Johnson, Professor R. B. C., Princeton Univ., Princeton, N. J.
Jones, Professor A. H., Brown University, Providence, R. I.
Jones, Professor A. L., Columbia Univ., New York.
Jones, Professor Rufus M., Haverford College, Haverford, Pa.
Jordan, Professor E., Butler College, Indianapolis, Ind.
Kallen, Dr. Horace, School of Social Research, New York.
Kantor, Professor J. Robert, Indiana Univ., Bloomington, Ind.
Keyser, Professor Cassius J., Columbia Univ., New York.
Kitch, Professor Ethel M., Oberlin College, Oberlin, Ohio.
Kruse, Professor Cornelius F., Wesleyan Univ., Middletown, Conn.
Ladd-Franklin, Mrs. Cristine, 564 Park Ave., New York.
de Laguna, Dr. Grace A., Bryn Mawr College, Bryn Mawr, Pa.
de Laguna, Professor Theodore, Bryn Mawr College, Bryn Mawr, Pa.
Lamprecht, Dr. S. P., University of Illinois, Urbana, Ill.
Landes, Dr. Margaret W., Wellesley College, Wellesley, Mass.
Lane, Professor W. B., Univ. of Toronto, Toronto, Canada.
Leary, Professor D. B., Univ. of Buffalo, Buffalo, N. Y.
Lefevre, Professor Albert, Univ. of Virginia, Charlottesville, Va.
Leighton, Professor J. A., Ohio State Univ., Columbus, Ohio.
Lewis, Professor Clarence I., Harvard Univ., Cambridge, Mass.
Lloyd, Professor A. H., Univ. of Michigan, Ann Arbor, Michigan.
Lodge, Professor Rupert C., Univ. of Manitoba, Winnipeg, Canada.

Loewenberg, Professor J., Univ. of California, Berkeley, Cal.
Longwell, Professor Horace C., Princeton Univ., Princeton, N. J.
Lord, Professor H. G., Columbia Univ., New York.
Lough, Professor J. E., Sch. of Pedagogy, N. Y. Univ., New York.
Lovejoy, Professor A. O., Johns Hopkins Univ., Baltimore, Md.
Lyman, Professor Eugene W., Union Theol. Sem., New York.
McClure, Professor M. T., University of Illinois, Urbana, Ill.
McCormack,, Mr. Thomas J., La Salle, Ill.
MacGiffert, President A. C., Union Theol. Seminary, New York.
McGilvary, Professor E. B., Univ. of Wisconsin, Madison, Wis.
MacDougall, Professor R. M., New York Univ., New York.
McIntire, Professor Walter A., Wheaton College, Norton, Mass.
Macintosh, Professor Douglas C., Yale Univ., New Haven, Conn.
Mackenzie, President William D., Hartford, Conn.
MacLennan, Professor S. F., Oberlin College, Oberlin, Ohio.
Marsh, Professor H. D., College of the City of N. Y., New York.
Marshall, Dr. Henry R., 7 West 43d St., New York.
Marvin, Professor W. T., Rutgers College, New Brunswick, N. J.
Mason, Professor M. Phillips, Bowdoin College, Brunswick, Maine.
Mead, Professor George H., Univ. of Chicago, Chicago, Ill.
Mecklin, Professor John M., Dartmouth College, Hanover, N. H.
Meiklejohn, President Alexander, Amherst, Mass.
Miller, Professor Dickinson S., General Theol. Seminary, New York.
Mitchell, Professor Arthur, 20 Beacon St., Northampton, Mass.
Montague, Professor W. P., Columbia Univ., New York.
Montgomery, Dr. G. R., 1 E. 24th St., New York.
Moore, Professor Addison W., Univ. of Chicago, Chicago, Ill.
Moore, Professor E. C., Los Angeles State Normal School, Los Angeles, Cal.
Moore, Professor Elward L., Harvard Univ., Cambridge, Mass.
Moore, Professor Jared S., Western Reserve Univ., Cleveland, Ohio.
More, Professor Lewis T., Univ. of Cincinnati, Cincinnatj, Ohio.
Morris, Professor Frank E., Connecticut College, New London, Conn.
Morrow, Dr. Glenn R., University of Missouri, Columbia, Mo.
Muir, Professor Ethel G., Lake Erie College, Painesville, Ohio.
Nagy, Dr. Elizabeth V., Smith College, Northampton, Mass.
Newbold, Professor W. R., Univ. of Pennsylvania, Philadelphia, Pa.
Newlin, Professor W. J., Amherst College, Amherst, Mass.
Northrop, Dr. F. C., Yale Univ., New Haven, Conn.

Overstreet, Professor H. A., College of the City of New York, N. Y.
Pace, Professor E. A., Catholic Univ. of America, Washington, D. C.
Paine, Dr. E. T., Cornell Univ., Ithaca, N. Y.
Parker, Professor D. H., Univ. of Michigan, Ann Arbor, Mich.
Parkhurst, Dr. Helen, Barnard College, New York City.
Patterson, Dean H. P., Oklahoma A. & M. College, Stillwater, Okla.
Payne, President Bruce R., Teachers' College, Nashville, Tenn.
Peckham, Dr. George W., Last House, River Road, Inwood Park, New York City.
Penney, Professor M. E., Cornell University, Ithaca, N. Y.
Pepper, Dr. Stephen C., Univ. of California, Berkeley, Cal.
Perrier, Dr. Joseph, Columbia Univ., New York.
Perry, Professor Ralph B., Harvard Univ., Cambridge, Mass.
Picard, Dr. Maurice, Wells College, Aurora, N. Y.
Piper, Professor Raymond F., Syracuse Univ., Syracuse, N. Y.
Pott, Professor Wm. S. A., Univ. of Virginia, Charlottesville, Va.
Powell, Professor Elmer E., Miami Univ., Oxford, Ohio.
Prall, Professor D. W., Univ. of California, Berkeley, Cal.
Pratt, Professor J. B., Williams College, Williamstown, Mass.
Proctor, Dr. T. H., Williams College, Williamstown, Mass.
Rand, Dr. Benj., Harvard University, Cambridge, Mass.
Randall, Dr. J. W., Jr., Columbia Univ., New York.
Raub, Professor Wm. L., Knox College, Galesburg, Ill.
Raymond, Professor George L., Stoneleigh Court, Washington, D. C.
Riley, Professor I. Woodbridge, Vassar College, Poughkeepsie, N. Y.
Roback, Dr. Abraham A., Harvard Univ., Cambridge, Mass.
Robbins, Mr. Reginald C., Lone Tree Farm, Hamilton, Mass.
Sabin-Smith, Dr. Ethel E., Mills College, Cal.
Sabine, Professor George H., Univ. of Missouri, Columbia, Mo.
Salter, Mr. William M., Silver Lake, N. H.
Savides, Professor A. P., Colby College, Waterville, Me.
Schaub, Professor E. L., Northwestern Univ., Evanston, Ill.
Schneider, Dr. H. W., Columbia Univ., New York.
Sellars, Professor R. W., Univ. of Michigan, Ann Arbor, Mich.
Sellen, Professor Arthur G., Brown Univ., Providence, R. I.
Shanahan, Professor E. T., Cath. Univ. of America, Washington, D. C.
Sharp, Professor Frank C., Univ. of Wisconsin, Madison, Wis.
Sharrard, Professor J. A., Univ. of Saskatchewan, Saskatoon, Canada.
Shaw, Professor C. G., New York Univ., New York.

Shearer, Dr. Edna A., Smith College, Northampton, Mass.
Sheffer, Dr. H. M., Harvard Univ., Cambridge, Mass.
Sheldon, Professor W. H., Yale Univ., New Haven, Conn.
Slonimsky, Dr. Henry, 896 Lexington Ave., Cincinnati, Ohio.
Smart, Professor Harold M., Univ. of North Carolina, Chapel Hill, N. C.
Smith, Professor Henry B., Univ. of Pennsylvania, Philadelphia, Pa.
Smith, Professor Norman Kemp, Univ. of Edinburgh, Edinburgh, Scotland.
Sneath, Professor E. Hershey, Yale Univ., New Haven, Conn.
Snow, Dr. Adolph J., Northwestern Univ., Evanston, Ill.
Spaulding, Professor E. G., Princeton Univ., Princeton, N. J.
Squires, Professor W. H., Hamilton College, Clinton, N. Y.
Steele, Rev. E. S., 1522 Q St., Washington, D. C.
Strong, Professor C. A., Fiesole, Florence, Italy.
Swabey, Dr. Marie Colins, 2015 University Ave., New York.
Swabey, Dr. W. Curtis, New York Univ., New York.
Swenson, Professor D. F., Univ. of Minn., Minneapolis, Minn.
Symons, Professor N. J., Queen's Univ., Kingston, Canada.
Talbert, Dr. Ernest L., Univ. of Cincinnati, Cincinnati, Ohio.
Talbot, Professor Ellen B., Mt. Holyoke College, South Hadley, Mass.
Tawney, Professor Guy A., Univ. of Cincinnati, Cincinnati, Ohio.
Taylor, Professor W. J., Training School for Teachers, Brooklyn, N. Y.
Taylor, Professor W. S., Univ. of Maine, Orono, Me.
Thilly, Professor Frank, Cornell Univ., Ithaca, N. Y.
Thorndike, Professor E. L., Columbia Univ., New York.
Toll, Professor C. H., Amherst College, Amherst, Mass.
Tower, Dr. Carl V., Ursinus College, Collegeville, Pa.
Townsend, Professor Harvey G., Smith College, Northampton, Mass.
Tsanoff, Professor R. A., Rice Institute, Houston, Texas.
Tufts, Professor James H., Univ. of Chicago, Chicago, Ill.
Turner, Professor John P., College of the City of New York, N. Y.
Tuttle, Professor John R., Elmira College, Elmira, N. Y.
Urban, Professor William M., Dartmouth College, Hanover, N. H.
Van Riper, Dr. Benjamin, Rockford College, Rockford, Ill.
Veazie, Dr. Walter, Univ. of Colorado, Boulder, Colo.
Vibbert, Professor Charles B., Univ. of Michigan, Ann Arbor, Mich.
Walcott, Professor G. D., Hamline Univ., St. Paul, Minn.

Warbeke, Professor John M., Mt. Holyoke College, South Hadley, Mass.
Warren, Dean William M., Boston Univ., Boston, Mass.
Washburn, Professor Margaret F., Vassar College, Poughkeepsie, N. Y.
Wells, Professor Wesley R., Lake Forest College, Lake Forest, Ill.
Wenley, Professor R. M., Univ. of Michigan, Ann Arbor, Mich.
Weyer, Professor Edward M., Wash. and Jeff. College, Washington, Pa.
Whitney, Professor G. W. T., Princeton Univ., Princeton, N. J.
Weiner, Dr. N., Mass Institute of Technology, Boston, Mass.
Wilde, Professor N., Univ. of Minnesota, Minneapolis, Minn.
Williams, Professor R. D., Ohio State Univ., Columbus, Ohio.
Wilm, Professor E. C., Boston Univ., Boston, Mass.
Wilson, Professor G. A., Syracuse Univ., Syracuse, N. Y.
Wolfson, Professor Harry A., Harvard Univ., Cambridge, Mass.
Woodbridge, Professor F. J. E., Columbia Univ., New York.
Woods, Professor James H., Harvard Univ., Cambridge, Mass.
Wright, Professor William K., Dartmouth College, Hanover, N. H.

Associate Members.

Bentley, E. B., 1220 Washington Ave., Springfield, Mo.
Harris, Dr. B. Malcolm, 115 South Lake Ave., Albany, N. Y.
Thalheimer, A., Johns Hopkins Univ., Baltimore, Md.
(Members are requested to notify the Secretary of any correction to be made in the above list.)

ABSTRACTS OF PAPERS READ AT THE TWENTY-THIRD ANNUAL MEETING OF THE EASTERN DIVISION OF THE AMERICAN PHILOSOPHICAL ASSOCIATION.

I. SCIENCE AND PHILOSOPHY.

Science and science teaching in our schools and colleges have developed an orthodoxy as irrational and as pernicious as orthodoxy in religion. As a result our students incline to accept a cut and dried static world, very unlike the world we actually experience. In this unreal 'Platonic' world, types, ideas, numbers, principles and laws have replaced the animistic gods of primitive man, with little missing except personality. 'Gravitation' moves planets, 'laws' direct swinging pendulums, 'principles' determine mechanical efficiency. It is the business of philosophy to undertake a critical examination of our prejudices and beliefs if it is to be "anything better than innocent but useless trifling." Its value is "to be sought rather in its very uncertainty." In order to attend to this business, all departments of philosophy should consciously undertake a history, review, and criticism of the methods and results of the sciences since the latter have as their function to provide conceptual representations of our physical percepts, and their results "cannot be employed in any direct manner for the purpose of throwing light upon the nature of assumed reality" (Holson).

Mathematics often demands a kind of awed deference to its supposed indubitable 'truth.' But its 'truth' is only consistency to assumed axioms, which in turn hold only of abstractions. Nature has no units all exactly alike, no equals, no straight lines, no perfect planes or angles. It is only by ignoring differences that mathematics applies to the world of experience.

The laws of nature as determined by the physical sciences are based on the observed uniformities of our experience. Wonderful have been the achievements of humanity following the discovery of these laws! But the student is introduced to these laws, not as the average behavior of similars, but as if they were a kind of universal fiat 'obeyed' by material things; whereas in fact nothing ever exactly 'obeys' natural law, and there is universally an inexplicable and untamable element of personality in mass, molecule, atom and electron.

This legalized world of the sciences is bad for the student, already too willing to have things told to him. What he needs is not informa-

tion but challenge; for all this systematized and predigested truth has not in fact the finality claimed for it, and we need thinkers and investigators rather than practitioners. The philosophical faculties are the best placed of all for this service. For one thing, they are doing over and over a lot of hair-splitting which has already been sufficiently attended to; secondly, the larger and more general aspects of the sciences are their particular field; and finally, scientists are not able as scientists to undertake the task of criticism of their own postulates and general conclusions. If we should undertake this task we would be obliged to inform ourselves thoroughly concerning the methods and results of the sciences. But this information would bring us more genuinely in touch with our own time and its needs. Nor would it be an evil result that we should be obliged to spend less time working the old mines, considering the exact meaning and implications of our predecessors, but should turn to the exact meaning and implications of our own day.

JESSE H. HOLMES.

SWARTHMORE COLLEGE.

II. PERCEPTION AND THOUGHT.

Accepting the view that perception involves something more or something other than the presence of sense data, the question to be asked is, what relation does this residual element in perception bear to reason and thought? It is this residual element which renders perception genuinely cognitive, *i.e.*, gives it an objective reference to independent structures. There are two broad alternative answers to this question:

(*a*) The cognitive function of perception is founded upon practical necessity and "animal faith" and is, accordingly, divorced from every rational interest. This view assumes a fundamental antithesis and antimony of perception and thought. It has its deepest basis in the notion that perception is a practical, biological function, and that all practical activities are necessarily partial and selective, whereas thought and reason are comprehensive and universal in their intent and interest.

(*b*) The alternative view arises from the discovery within perception of processes and aspects which are generically akin to thought processes. This view seeks to overcome the sharp antinomy of perception and thought, of attentive selection and the mind's interest in comprehensive totalities, of practical and theoretical activities. The

evidence for this latter alternative is in the facts that: (1) perceived objects are saturated with meanings which are not themselves sensa, and whose apprehension is due to thought processes; (2) the total perceptual field is cognized within a wider context of space, time and meaning, whose apprehension enters into and colors the immediate perceptual field. The perceptual field thus lies between sense data which are *more* fragmentary than the total perceived object, and a wider fringe of space-time which is *less* fragmentary than what is directly perceived. There is a cognitive continuity between (*a*) sense data, (*b*) perceived object, and (*c*) an outlying system of space-time relations and structures.

Therefore, the antinomy of perception and thought requires softening down through the recognition of the fact that perception is not so completely selective, partial and fragmentary, and so definitely opposed to our rational interest in totalities, as is frequently supposed. This conclusion suggests the possibility that in other respects the antinomy of theoretical and practical, of reason (or scepticism) and "animal faith," is not final.

GEORGE P. ADAMS.

UNIVERSITY OF CALIFORNIA.

III. ACT, CONTENT, AND OBJECT.

The present paper defends the thesis that in all cases of presentation or of cognition in the widest sense three correlative elements are to be distinguished. There is always the psychic experience itself which intends an object *through* an idea or content. By the term 'act' is understood, following the usage of Husserl, an intentional experience, an experience which is inwardly and essentially directed on an object. The act is the experiencing itself and is alone psychically real. Both the content and the object are extra-psychic and non-mental in nature. The act is the living spark, the pure awareness, which is alone capable of animating the dead stream of sensations and images into what we call consciousness. Intentionality is the essence of consciousness, but not all of the so-called parts of consciousness are intentional in character. Sensations, images and feelings, as ordinarily conceived in psychology, are non-intentional. They do not refer to any object; they are mere dead bits of psychic stuff. But they can not exist of themselves; they must always occur as parts of some act of consciousness, which is, as such, intentional.

The content of the act is an essence, a Platonic Idea, and is not

a real part of the psychic stream, the act-continuum. In the act of imagining, for example, there is always an object and a content, and the same object can be imagined through many contents; the content being simply the manner in which any object, Hamlet, say, is envisaged in any particular psychic act. The same distinction between content and object applies in the case of perception and may be suggested by a reference to the many appearances of the one table emphasized by Mr. Russell. The existence of these act-contents or essences or ideas is discovered by a process of objectification of contents. The content of an act does not appear as an object in or to the act of which it is the content. It is only in a second act that, say, my idea of Hamlet can be made into an object. From this standpoint the falsity of the picture-theory is made clear. The process of objectification also makes manifest the non-mental character of ideas or act-contents. It is ordinarily concluded that what is not material must be mental, and the possibility of a realm of ideal being which shall transcend the dichotomy of psychical and physical is neglected. When I objectify the content of an act, however, whether it is an act of imagination, memory, conception, or sense-perception, I am contemplating an eternal essence, not something which might be a real psychic process. The conscious act-continuum flows or takes place in time, while an objectified content is rigid and static; the former exists in the full sense, the latter is non-existential or ideal. A man's ideas change only in the sense that they replace or are substituted for each other; each act-content remains itself. Neither acts nor contents, however, will ever be discovered by that psychological introspectionist who has decided *a priori* that consciousness is compounded out of sensations and images.

W. C. SWABEY.

NEW YORK UNIVERSITY.

IV. THE NATURE OF OBJECTIVE REFERENCE.[1]

Paper by William Savery.

V. AN ESSENTIAL FACTOR IN EVERY TRULY RADICAL EMPIRICISM.

This paper registers two protests against the appropriation by William James and others of the term "radical empiricism" as designation of the doctrine that "reality is an experience-continuum in which the parts hold together by relations that are themselves parts

[1] Abstract not received in time for publication.

of experience." It questions, in the first place, the right of any particular system of philosophy to use as its own special tag what should be a description of every system. It points out that every philosophy is, or intends to be, empirical in that it starts from facts of experience, and also rational in that it reasons from these facts. The paper urges, in the second place, that James's theory falls short of being truly radical empiricism in that it ignores or denies the existence of experienced selves. Part I deals with the re-emergence of selves in contemporary psychology, theoretical and experimental, and discusses the misconceptions held by those who still adhere to a self-less psychology. Part II develops the main thesis of the paper, that the self makes the same claims on a truly empirical philosophy which it makes on a science—the claim to be recognized as an immediately experienced reality. The concept of the self, it is pointed out, is taken over by philosophy from psychology; and the self of any philosophy is therefore the psychologist's self supplemented by those characters which that particular philosophical system inferentially attributes to it. The paper closes with the attempt to show that Humian ideism and all forms of materialism are the only doctrines which forfeit their claim to rank as empiricisms by denying or ignoring the self.

MARY WHITON CALKINS.

WELLESLEY COLLEGE.

VI. A CRUCIAL ARGUMENT IN MODERN IDEALISM.

The belief that mind is the one reality of the universe has recently been defended by Haldane, and one may believe that his type of reasoning is as cogent a support of that thesis as any other attempted at present. The first part of his argument, as we may divide it, emphasizes the relativity of our conceptions of the objective world and aims to show that mind has at any rate an essential rôle in all knowing. The final part deals with the relativity of our conceptions of knowledge itself, and concludes that mind or knowledge is the one ultimate entity.

The relativity of our conceptions of the objective world is rightly given great importance; and one may admit the proposition that each of our conceptions is a mental construction. But from this one cannot draw the metaphysical inference that every theory is produced by mind; for the question remains quite open as to what type of reality we would best assume for the understanding of the facts which we conventionally call mental. So also we can agree that the most di-

vergent doctrines about reality are all instances of knowing, in a broad sense of the term; but this statement is merely a classification. Psychological class-names have no metaphysical standing at all. Objective judgments are relative to the knower; but this gives us no light on the proper expression for the nature of knower or objects.

The relativity of our conceptions of knowledge itself is also properly emphasized. But this gives no proof that idealism is the one right theory; on the contrary it should suggest that there are tenable alternatives. In expressing his own doctrine Haldane attributes an active and creative character to mind and knowledge as idealists typically do. But his more careful statements contradict this, and we are left not with any explanation but with a mere classification. At the end he reverses himself and abandons his main theses when he says, "We should satisfy ourselves by observation of the actual as to the categories required in its study."

CHARLES H. TOLL.

AMHERST COLLEGE.

VII. THE NATURE OF VALUE.[1]

Paper by R. W. Sellars, University of Michigan.

VIII. NATURE, REASON, AND ROMANCE.[1]

Paper by Morris R. Cohen, College of the City of New York.

IX. CONTRADICTION IN METHOD IN MAURICE BLONDEL'S PHILOSOPHY OF ACTION.

1. Although but little known in America, Maurice Blondel has been a conspicuous figure in the anti-intellectualistic movement in French philosophy. His chief work, *L'Action*, appeared shortly after the first of Bergson's, and manifests an interesting "spontaneous harmony" with the position of the greater thinker. Blondel believes that all intellectual descriptions of reality—positive science, speculative psychology, metaphysics—claim an adequacy which they do not, in their own right, possess. However, "what is impenetrable to thought, is accessible to action." Action is at once a primitive *élan* and a highly articulated dialectic.

2. While Blondel appeals throughout from the abstractness of intellect to the concreteness and efficacy of dynamism, his own procedure contradicts in important ways his avowed method.

(*a*) The formal principle of contradiction is repeatedly invoked to impel the movement of action in its dialectical progress.

[1] Abstract not received in time for publication.

(*b*) The nature of intelligence is defined by exclusion and abstraction instead of by a concrete inspection of the intelligence at work. Intelligence is the contradictory of the dynamic.

(*c*) The nature of action is also, though not consistently, defined by abstraction and exclusion. In a persistent strain of the argument, action is movement and force without reasonable form. At bottom, action is a "mystic principle."

3. Blondel forces the abstractness of his method upon himself by defining individuality as ineffable. If individuality is not the systematic expression alike of thought and action, action and thought fall apart not only from each other, but from every concrete whole.

KATHERINE E. GILBERT.

TRINITY COLLEGE.

REVIEWS OF BOOKS.

Die Philosophie am Scheidewege. Die Antinomie im Werten und Denken. Von JULIUS SCHULTZ. Leipzig, Verlag von Felix Meiner, 1922.—pp. 322.

The character of many of the books which have been published in Germany since the war and are apparently enjoying a large circulation, would seem to indicate that German philosophy is in a state of fermentation the like of which has not been observed since the days of Romanticism. It is a philosophy of revolt which announces itself even in the title-pages: *Die Philosophie der Individualität; Irrationalismus; Personalismus; Persönlichkeit und Weltanschauung; Der Untergang des Abendlandes; Die Philosophie am Scheidewege.* The most scientific, logical, rationalistic, efficient, practical nation of Europe is expressing in such works its passionate protest against scientism, intellectualism, standardization, mechanization, utility; it is making an emphatic plea for life against the machine, for quality against mere quantity, for poetry against the barren utilitarian prose of Philistinism which has come in with modern industrialism. "To the æsthetic observer," as Professor Schultz graphically puts it, "an animal is a living thing, to the hunter it is a roast, to the peasant a motor or a milk-well. Man is a living thing to the poet; to the general he is a gun, to the statesman a point of power, to the enterpreneur a 'hand.' To the artist a line is a living thing, to the mathematician, however, it is a curve of the formula: $y = f(x)$." The individual has been made an instrument for all kinds of purposes, and morality a mere means to a social end. The quantitative ideal replaces the qualitative, and the goal is "the greatest good of the greatest number." The individual has become a tool for service; socialism is aiming to transform society into the most efficient machine that the world has ever seen; and the machine is the climax of rationalization. Efficient mass-production of goods and men is the end; the world is being turned into a factory, with a manufacturer's ethics.

Professor Schultz tells us that he had practically completed this book in 1917, but that circumstances of that time did not seem favorable to its publication; the appearance, however, of the books of Spengler, Müller-Freienfels, and Jaspers, in which he discovered kindred strains to his own, has led him to offer it to the public. Indeed, it may be said that his doctrine was foreshadowed in his *Maschin-*

entheorie des Lebens which bears the date of 1909. His aim in the present volume is to work out what he regards as the two basal ways of looking at things which are rooted in two different types of mind, the practical or purposive type and the intuitive, mimetic, or æsthetic type. With this end in view he discusses in detail: "the two basal values," "the two basal conceptions of life," "the two ethics," "the two metaphysics," and "the two conceptions of history." The practical or purpose-man admires the preservation-values, duration, quantity, setting up as an objective value the welfare or prosperity of the group, while the æsthetic man is interested in a wealth of forms, the timeless, quality, uniqueness, individuality; for him life can never be grasped by calculation, but only by being re-lived in one's own experience (*Nacherleben*). For the former, everyone is to count for one in society, and every individual is important; for the latter, the mere exemplar of the species has no worth as such; the unique personality alone has worth. For the former, goodness and beauty are worthwhile only in so far as they further the welfare of the nation, while for the latter, the life of a people has worth only in so far as it unfolds a wealth of psychic forms and beauty. To the æsthetic thinker *Kultur* is the expression of an age or of a people, and as such an end in itself; to the practically minded, a means of preserving society—what we ought really to call civilization.

Upon these two fundamental values our author builds two distinct opposing moral systems. There are only two self-consistent types of ethics, the ethics of form or character-ethics, and the ethics of preservation or survival-ethics. The æsthetic moralist prizes not a doing but a being, character; he respects and despises different kinds of will in his fellows and in himself, feeling that he is praising and blaming the very kernel of personality. To him a world in which there is ethical conflict is more interesting and more desirable than a world in which everybody does his duty automatically like a rational ant. The practical moralist approves of social conduct because it is useful; his opponent because it is a revelation of the truly human character, which can take on form only by living in the thousandfold relations with the whole,—what interests him is the discord or the harmony of the orchestra, not the duration of the concert. The praiseworthy character is bound to reveal itself in social intercourse, in virtues embraced under the term *humanitas*. Character means form, health, constancy in change; it must bear its own unique stamp, remain true to this and to itself; from the principle of loyalty to self (not from the preservation

of society) follow respect for loyalty to others, truthfulness, constancy. To each one is prescribed one and only one single line of being, if this is missed, the character is blamed. And although there may be as many different forms of the ideal as there are men, the ideal remains relatively true to itself for thousands of years. Hector and Penelope, Antigone and Prometheus, Job and Joseph, are even to this day types of the noblest humanity. Socrates and Isaiah, Fabricius and Epaminondas, stand before our old eyes without loss of value. Character, however, manifests itself only in acts, in the living life; but it is not the success of these, their result or purpose, nor even their relation to the command of duty, that indicates the essence of the character; it is the motive and the manner in which they are carried out that counts here.

Metaphysics, too, is ultimately grounded in the predisposition and inclination of the particular thinker; there are consequently, only two consistent systems, the aim of each being to understand the world. The practical man seeks to reduce it to rule or law, the lover of beauty to anthropomorphize it, to interpret it in terms of selfness (*Ichhaftigkeit*), to recreate all occurrences in terms of his own inner motor-experiences; for him the world pulsates with the causality which he feels in himself. And so he transforms the visible picture with its wealth of qualities and beauty into a system of active forces of attraction and repulsion, into a force-machine. This would seem to be a surrender of the æsthetic standpoint in favor of a cold scientific and practical way of loking at things! For what could be more uninteresting to the artist than a pushing and pulling mechanism? Professor Schultz, however, saves beauty by putting the secondary qualities, the colors, tones, and fragrances, into the soul itself, while nature becomes for him a work of art also: form, system, an organized system of positions and rhythms. Indeed, he says, we have here the two parallel manifestations of the supersensible *spiritual* essence, which reveals itself to perception as appearance and to thought as a mechanism. Every form has a meaning which dominates it and constitutes its real being; every plant and animal form has its individual meaning, every species-form its idea. The spiritual is immanent in the corporeal from eternity to eternity. Spirit fills the whole universe; the soul pervades and rules not only the entire organic kingdom but crystals and molecules as well. The absolute unconscious spiritual substance is an inwardly organized structure; everything springs from the innermost essence of the original will, and the highest free-

dom coincides with the deepest necessity. We, too, are free in so far as we are permitted to set up our aims according to our nature, but we do not therefore tear ourselves loose from our nature. We are free in so far as we choose our own means as we please, but this freedom is always governed by our insight into the simplicity of the means.

On the basis of this panpsychist doctrine, mechanism and teleology are reconciled with the help of the Aristotelian philosophy. The spiritual, which eternally expresses itself in the eternal meaning of the universe, we call Idea; the working will-element which pursues organic purposes, we call entelechy: it guides the course of the machines without violating any law of physics or chemistry. How that is possible our own free control of our technical contrivances shows. The same psyche which at every moment builds for us our own body, upon whose stimuli it responds, uses this body as its instrument. The psychic element in the soul of our fellow manifests itself solely as a moved body. Human culture is only a special case of the life of nature, consciousness a sector of the limitless animation of the world. Unconscious animation, however, cannot "make" forms; all it can do is to reveal itself as form, appear as form.

In human history, however, the æstheti philosopher finds no inward purposive *élan;* there is no ground for assuming, as the practically-minded do, teleological principles of occurrence beyond the play of known psychic forces; hence no Idea, no moral principle is needed here. Whoever studies the past will doubt that civilization tends to enhance the power and native endowment, the talent, of every people. There are no more barbarians like the old Germans left upon whom we can draw. Our civilization is the last on earth; if it is condemned to senility and death, progress will come to an end. Good breeds of animals die out unless mixed with new blood. Mixed peoples, not pure peoples, are the real culture-bearers. Every advance to higher civilization is purchased at the cost of the gradual exhaustion of mental powers. The Greeks lasted two-hundred years from the state of simple peasanthood to the wildest splendor of the mental life. Four-hundred years after Alexander there were no unmixed descendants of this noble stock.

The picture which Professor Schultz draws of the future will bring cheer to the hearts of the Babbitts and gloom to the poets. Life will run more and more smoothly and speedily; the division of labor will become more intensified; there will be no more creative geniuses; in-

dustry will become more and more centralized. War will be banished because of its irrationality; we shall have the eternal peace; and the socialization of mankind will be complete. Either powerful combinations of interests will gradually replace the State (or constitute its basis) or the State will assume the direction of industry. Communism of production and consumption will be established, and there will be the universal duty to work. Individualism has reached its culmination; from now on the individual will be peacefully drowned in the universal, rational, highly organized socialism of the future. Everybody will become a number. There will be a great increase of physical power, so that the earth will be able to support from ten to fifteen billions of men; and birth-control will prevent overpopulation. There will be the same education for all children, and it will be made useful to the community. The greed for property will disappear. Perhaps socialism will train its pupils to be obedient and humble pieces of the huge labor-machine. The æsthetic natures will die out. The industrial ant-man of the future will be the true saint. Metaphysics in its philosophical and religious forms will be dethroned; indeed, Kant had already cut out its ovaries.

One may doubt whether, in spite of its spiritualistic character, Professor Schultz's metaphysics will satisfy the æsthetic type of mind. For, after all, the spirit which is immanent in the universe manifests itself in the form of a machine, a machine, indeed, that has a meaning and a psychic side, but yet is a thorough-going piece of mechanism. The atoms and molecules existed a billion years ago in such an arrangement of space that at a given time the earth had to be formed, and then the organic bodies. What breathes and blooms today was preformed some billions of years ago, what seems disorder today contains the necessary endowment of future form, which will perhaps unfold itself after billions of years (page 177). It is true, these machines have an objective meaning, being revelations of the absolute spirit, and as such, our author holds, they are works of art. But if that is so, would not the smoothly-running society machine which he predicts be a work of art also? It can not be that, according to him, because man-made machines have meaning only in the heads of men. Evidently the spirit of God is not in them even though they are created in the image of his own works.

There is another point in Professor Schultz's metaphysics which needs to be cleared up. The system seems to be strictly deterministic, and yet the door is left open for human freedom. The human

psyche builds its body for itself, but since every organism is the result of past arrangements of matter, this activity of the psyche must be predetermined. At the same time the conscious will of man can guide the movements of this body and through it those of other bodies and so construct the technical machines. If man can do that, are not things brought about by him which are not laid down in the original arrangements of the universe? And is he not then responsible for the course of human history, and can he not change it? Professor Schultz would perhaps answer that he could if he had character, but that character is a gift of God and not something that can be voluntarily produced by man. If, however, we say that both character and the human will have been preformed, then surely human history must be fore-ordained and the finger of God must be in it, even in its drab mechanistic ending. And what is to prevent us from believing that new revelations of character will appear, that man may some day feast his tired eyes upon a finer race of supermen? To be sure, the present prospect is not pleasing, but who can prophesy what the future will bring? It is not unlikely that the sleeping Gulliver whom industrialism is pegging down will some day wake up and break his bonds.

FRANK THILLY.

CORNELL UNIVERSITY.

Philosophie der symbolischen Formen. Erster Teil: Die Sprache. By ERNST CASSIRER. Berlin, Bruno Cassirer Verlag, 1923.—pp. xii, 293.

The announcement of a new elaborate systematic work by the author of *Das Erkenntnisproblem* and *Substance and Function* is an event of genuine importance to those who are familiar with the stores of learning and brilliant insights of Cassirer's earlier works. The present book, which is concerned with the philosophy of language, is the first of a proposed series of three volumes which are to treat of the problem of symbolism in all its phases. As is indicated by the titles of Cassirer's most recent works (*Cf. Freiheit und Form: Studien zur deutschen Geistesgeschichte* and *Die Begriffsform im mythischen Denken*) his interest is no longer exclusively directed to the philosophy of mathematics and mathematical physics; it has rather been broadened and made to extend to the field of *Kultur* in its less technical forms. This fact in itself is important as it shows that the exclusive attention to the exact sciences, which was characteristic of

Cassirer's earlier work, was by no means a necessary consequence of his critical idealism; the same principles and method now serve in an approach to the problems of quite another sphere. The new work is to be an analysis of all the symbolic forms by which man apprehends and, according to Cassirer, "creates" his world. The present volume deals with language, the second is to contain a phenomenology of mythical and religious thought, while the third is to be devoted to the *Formenlehre des wissenschaftlichen Denkens.*

The first chapter is of most interest from a general point of view. It sets forth in a new fashion the principles of that critical idealism which runs as a unifying thread through all of Cassirer's works. The underlying doctrine of critical idealism is not easy to formulate unambiguously, but the principle of the creativeness of thought seems to be central. Thought is not a passive apprehension of a world of *given* things and processes; it is a process of creation; a world exists for us at all only because thought has actively produced, operating according to its immanent criteria, an ordered totality. Taken abstractly this argument is perhaps subject to the strictures of the neo-realists on idealism in general. If we suppose Cassirer to be concerned with establishing a metaphysical subjective idealism we may not be convinced; but his primary concern is apparently with the description of the actual logical process by which the cultural realities have evolved, and in this sense the existence of intellectual creativeness is a question of fact. And Cassirer richly substantiates the empirical creativeness of thought; in *Substance and Function* he demonstrates the creativeness of thought in the fields of abstract science and in the present volume he demonstrates this same creativeness in the historic evolution of language.

The doctrine of symbolic forms is the opposite of the view that knowledge consists of passive copies of a given reality. It is in mathematical and physical knowledge that this symbolic character comes to light most clearly. Cassirer cites a passage from Hertz's *Prinzipien der Mechanik* in which the latter speaks of certain *"innere Scheinbilder oder Symbole"* by means of which we are able to predict future experiences; if we have once gained such images we can deduce from them, as if from models, what will happen in the outer world. But such images need not resemble the processes of nature in any pictorial way; their predictive function is alone important. Ideas are not pictures resembling a given reality but symbols serving for the prediction of experiences. Such concepts as those of mass and

force are mere symbols created by the logic of science and stand under the general criteria of that logic; they correspond to the standpoint of the science in which they arise and have no meaning apart from that standpoint. Each science has its peculiar manner of formulating its questions and knowledge is unable to attain any *one* being or reality; there is rather a reality corresponding to each science. Unity must be sought, not in the *object* of knowledge, but rather in the system of the methods and presuppositions of the sciences. The critique of science must trace the various forms of the concept, the various forms of symbolism, and discern the underlying system in which these forms find their places. But the doctrine of symbolic forms extends still further. Art and language, myth and religion are equally real forms of symbolism, and they all share with knowledge the fundamental feature that there dwells in them a spiritual energy which is not merely reproductive of realistically-given facts but is genuinely creative. The *Kritik der Vernunft* must be broadened into a *Kritik der Kultur* which will show how in these extra-scientific but indispensable forms of experience also the content is an expression of spiritual activity.

In all these forms of symbolism what is characteristic is that a particular sensuous content is clothed with an ideal meaning. The ideal meaning and the sensuous content are mutually indispensable and an abstract separation of the two must necessarily involve a falsification of experience. The nature of symbolism, of which language is only one example, is that in a particular sensuous content the whole of consciousness is mirrored and focussed. Cassirer is especially successful in making this point clear. Each simple quality of consciousness has a determinate content only to the extent that it is set in relation with other contents. The particular must *represent* the whole and in this Cassirer finds the true meaning of the much-abused epistemological concept of *representation*. Presentation is only possible through representation in the sense that an individual sensuous content can not exist in consciousness save as related to other contents; the present is possible only in relation to the past and the future and the here in space involves the spatially remote. Cassirer makes clear his doctrine of representation by reference to Berkeley's theory of vision according to which a world of spatially ordered objects only arises for us in so far as we learn to connect impressions from diverse senses and take them as *signs* for each other. In all spatial perception, therefore, there is involved a kind of natural sym-

bolism or language, and in this mirroring of the system of experience in the particular sensuous content Cassirer finds the general point of view under which all forms of symbolism, including language, are to be subsumed.

With regard to language itself perhaps the most important general thesis advanced and concretely illustrated by Cassirer is that language does not serve merely to express a separately existent thought but that thought and language develop through a process of continual interaction. Language is itself one of the presuppositions of thought and hence our ordered universe only exists for us, in its shaping and structure, because of our power to use words. Language is therefore not a mirror reflecting an independently existent and contemplated universe of things, but it is one of the intellectual conditions which render possible such a world. If we grant a world of realistically existent things prior to all thought, such considerations necessarily lead to skepticism, and, as Cassirer points out, there have been skeptics from the time of the Sophists on, who have based their skepticism on considerations of language. Cassirer's answer to such skepticism is in terms of idealism. Reality is not something given but is the ideal goal of intellectual construction; while language, far from being a hindrance to thought, is one of the essential conditions by means of which thought accomplishes its task. The search for a purely immediate intuition of concrete reality without the assistance of language is, as Cassirer points out, mysticism (*Cf.* p. 48). From the latter point of view the true purpose of a philosophy of culture in all its forms would be to strip off the veil of symbolism which has come to separate man from concrete immediate reality, but this enterprise is self-contradictory in that it would mean that philosophy would have to abandon its characteristic organ. Instead of attempting to turn back to pure immediacy, philosophy must endeavor to assist in the further development of culture. If all culture consists in the creation of certain systems of intellectual symbols, then the goal of philosophy does not consist in going back of these symbols to some more primitive level, but in understanding them in their fundamental principles. It is by means of the symbolic forms that life is elevated from the plane of a merely natural process to that of a conscious or spiritual process and the negation of the symbolic forms would, instead of permitting us to grasp the essence of spiritual life, destroy the higher life of man altogether.

The second chapter is devoted to the problem of language in the

history of philosophy as well as to the history of scientific linguistics and rather interrupts the systematic exposition, although it is in itself interesting and suggestive. The remainder of the book (122–293) is devoted to the specific problems of the philosophy of language. Cassirer's method is to raise questions from the point of view of general epistemology and to seek their answer in the vast storehouse of empirical material which has been collected by modern linguistics. He shows a surprising familiarity with this extended field which he enters for the first time in the present volume. Numerous works concerning the indogermanic, semitic, hamitic, altaic, African and South Sea languages, as well as those of Boas concerning the languages of the North American Indians, are used as sources. It is evident of course that Cassirer does not approach these problems as a special student of linguistics but as a student of philosophy with certain definite questions in mind for which he seeks an answer in the empirical material. His work is rather a suggestive introduction to the philosophy of language than an exhaustive treatment. The problems in which he is especially interested are connected with the various ways in which different languages have expressed, say, spatial relations, temporal relations, the idea of the self, abstract concepts or logical relations. He brings to light many interesting and curious facts. It is significant, however, that Cassirer finds nothing in the facts of primitive language which conflicts with that critical rationalism or idealism which was the theme of his works on the philosophy of mathematics and physics. He recognises that the ideas of space, time, number and of the various logical relations have had a long history and that in the earliest stages of culture these ideas were merged with the sensuous and the bodily. Number, for example, was at first closely connected with the parts of the body; counting was correlating objects with various bodily parts in a certain fixed order. Cassirer's point is that even in the lowest stages of these ideas evidence of the synthetic or logical activity of mind can be discovered. Needless to say, Cassirer avoids all attempts at an *a priori* construction of language and, as far as the layman can judge, makes no assertion to which the student of linguistics is likely to object. His critical idealism, here as elsewhere, is at the furthest possible remove from a rigid apriorism; it consists rather in emphasizing the creative activity of mind and in showing how certain logical functions have been present from the beginning but have only gradually freed themselves from their sensuous encumbrances. This creative intellectual

activity gains ever freer expression as language liberates itself from its excessively concrete and pictorial connections and becomes a more plastic instrument for grasping the relational structure of the world of experience.

W. C. SWABEY.

NEW YORK UNIVERSITY.

Philosophical Essays Presented to John Watson. Published by Queen's University, Kingston, Canada, 1922.—pp. 346. $1.50.

The publication of these *Essays* commemorated the fiftieth anniversary of Professor Watson's coming to Queen's. At the age of seventy-seven, Dr. Watson is still hale and hearty, and is now in his fifty-second year of teaching. The sincerity of thought, catholicity of interest, and devotion to truth which dominate his own philosophy have set an academic standard reaching far beyond the philosophy classroom. And in particular does his influence extend to the Theological College, for so many of the prospective 'theologues' pass through his hands that he has long been esteemed by the students in theology as an 'honorary' member of their faculty.

Dr. Watson is a Glasgow man and pupil of Edward Caird; and three fellow-Glasconians have contributed to this volume: James Cappon, professor emeritus of English in Queen's University, R. M. Wenley of the University of Michigan, and J. Muirhead of the University of Birmingham. All the other contributors were at the time of writing filling chairs in philosophy in various Canadian Universities.

A. S. Ferguson, in "Plato and the Poet's *Eidola*," argues that Plato excluded the poet from his ideal city-state (*Republic*, X) because poetry releases the emotions "from due subordination to the rational part" of the soul (148). In the Kallipolis "there cannot be two kings" (152).—G. S. Brett, in discussing "Aristotle's View of Tragedy," understands the *catharsis* which tragedy achieves not as a "purgation experienced by the audience" (170), but as the concrete presentation in action of "the conflict between man's variable nature and the laws which rule him inexorably . . . *freed from all that is confusing and irrelevant*" (177).—H. Carr contributes an essay on "The Function of the Phantasm in St. Thomas Aquinas," according to whom "the intellect cannot think without at the same time turning to the phantasms of the thing thought" (180), *i.e.*, to the mental images.—In "The Development of the Psychology of Maine de Biran," Norman Symons traces Biran's unsuccessful attempt to found

force are mere symbols created by the logic of science and stand under the general criteria of that logic; they correspond to the standpoint of the science in which they arise and have no meaning apart from that standpoint. Each science has its peculiar manner of formulating its questions and knowledge is unable to attain any *one* being or reality; there is rather a reality corresponding to each science. Unity must be sought, not in the *object* of knowledge, but rather in the system of the methods and presuppositions of the sciences. The critique of science must trace the various forms of the concept, the various forms of symbolism, and discern the underlying system in which these forms find their places. But the doctrine of symbolic forms extends still further. Art and language, myth and religion are equally real forms of symbolism, and they all share with knowledge the fundamental feature that there dwells in them a spiritual energy which is not merely reproductive of realistically-given facts but is genuinely creative. The *Kritik der Vernunft* must be broadened into a *Kritik der Kultur* which will show how in these extra-scientific but indispensable forms of experience also the content is an expression of spiritual activity.

In all these forms of symbolism what is characteristic is that a particular sensuous content is clothed with an ideal meaning. The ideal meaning and the sensuous content are mutually indispensable and an abstract separation of the two must necessarily involve a falsification of experience. The nature of symbolism, of which language is only one example, is that in a particular sensuous content the whole of consciousness is mirrored and focussed. Cassirer is especially successful in making this point clear. Each simple quality of consciousness has a determinate content only to the extent that it is set in relation with other contents. The particular must *represent* the whole and in this Cassirer finds the true meaning of the much-abused epistemological concept of *representation*. Presentation is only possible through representation in the sense that an individual sensuous content can not exist in consciousness save as related to other contents; the present is possible only in relation to the past and the future and the here in space involves the spatially remote. Cassirer makes clear his doctrine of representation by reference to Berkeley's theory of vision according to which a world of spatially ordered objects only arises for us in so far as we learn to connect impressions from diverse senses and take them as *signs* for each other. In all spatial perception, therefore, there is involved a kind of natural sym-

bolism or language, and in this mirroring of the system of experience in the particular sensuous content Cassirer finds the general point of view under which all forms of symbolism, including language, are to be subsumed.

With regard to language itself perhaps the most important general thesis advanced and concretely illustrated by Cassirer is that language does not serve merely to express a separately existent thought but that thought and language develop through a process of continual interaction. Language is itself one of the presuppositions of thought and hence our ordered universe only exists for us, in its shaping and structure, because of our power to use words. Language is therefore not a mirror reflecting an independently existent and contemplated universe of things, but it is one of the intellectual conditions which render possible such a world. If we grant a world of realistically existent things prior to all thought, such considerations necessarily lead to skepticism, and, as Cassirer points out, there have been skeptics from the time of the Sophists on, who have based their skepticism on considerations of language. Cassirer's answer to such skepticism is in terms of idealism. Reality is not something given but is the ideal goal of intellectual construction; while language, far from being a hindrance to thought, is one of the essential conditions by means of which thought accomplishes its task. The search for a purely immediate intuition of concrete reality without the assistance of language is, as Cassirer points out, mysticism (*Cf.* p. 48). From the latter point of view the true purpose of a philosophy of culture in all its forms would be to strip off the veil of symbolism which has come to separate man from concrete immediate reality, but this enterprise is self-contradictory in that it would mean that philosophy would have to abandon its characteristic organ. Instead of attempting to turn back to pure immediacy, philosophy must endeavor to assist in the further development of culture. If all culture consists in the creation of certain systems of intellectual symbols, then the goal of philosophy does not consist in going back of these symbols to some more primitive level, but in understanding them in their fundamental principles. It is by means of the symbolic forms that life is elevated from the plane of a merely natural process to that of a conscious or spiritual process and the negation of the symbolic forms would, instead of permitting us to grasp the essence of spiritual life, destroy the higher life of man altogether.

The second chapter is devoted to the problem of language in the

history of philosophy as well as to the history of scientific linguistics and rather interrupts the systematic exposition, although it is in itself interesting and suggestive. The remainder of the book (122–293) is devoted to the specific problems of the philosophy of language. Cassirer's method is to raise questions from the point of view of general epistemology and to seek their answer in the vast storehouse of empirical material which has been collected by modern linguistics. He shows a surprising familiarity with this extended field which he enters for the first time in the present volume. Numerous works concerning the indogermanic, semitic, hamitic, altaic, African and South Sea languages, as well as those of Boas concerning the languages of the North American Indians, are used as sources. It is evident of course that Cassirer does not approach these problems as a special student of linguistics but as a student of philosophy with certain definite questions in mind for which he seeks an answer in the empirical material. His work is rather a suggestive introduction to the philosophy of language than an exhaustive treatment. The problems in which he is especially interested are connected with the various ways in which different languages have expressed, say, spatial relations, temporal relations, the idea of the self, abstract concepts or logical relations. He brings to light many interesting and curious facts. It is significant, however, that Cassirer finds nothing in the facts of primitive language which conflicts with that critical rationalism or idealism which was the theme of his works on the philosophy of mathematics and physics. He recognises that the ideas of space, time, number and of the various logical relations have had a long history and that in the earliest stages of culture these ideas were merged with the sensuous and the bodily. Number, for example, was at first closely connected with the parts of the body; counting was correlating objects with various bodily parts in a certain fixed order. Cassirer's point is that even in the lowest stages of these ideas evidence of the synthetic or logical activity of mind can be discovered. Needless to say, Cassirer avoids all attempts at an *a priori* construction of language and, as far as the layman can judge, makes no assertion to which the student of linguistics is likely to object. His critical idealism, here as elsewhere, is at the furthest possible remove from a rigid apriorism; it consists rather in emphasizing the creative activity of mind and in showing how certain logical functions have been present from the beginning but have only gradually freed themselves from their sensuous encumbrances. This creative intellectual

activity gains ever freer expression as language liberates itself from its excessively concrete and pictorial connections and becomes a more plastic instrument for grasping the relational structure of the world of experience.

W. C. SWABEY.

NEW YORK UNIVERSITY.

Philosophical Essays Presented to John Watson. Published by Queen's University, Kingston, Canada, 1922.—pp. 346. $1.50.

The publication of these *Essays* commemorated the fiftieth anniversary of Professor Watson's coming to Queen's. At the age of seventy-seven, Dr. Watson is still hale and hearty, and is now in his fifty-second year of teaching. The sincerity of thought, catholicity of interest, and devotion to truth which dominate his own philosophy have set an academic standard reaching far beyond the philosophy classroom. And in particular does his influence extend to the Theological College, for so many of the prospective 'theologues' pass through his hands that he has long been esteemed by the students in theology as an 'honorary' member of their faculty.

Dr. Watson is a Glasgow man and pupil of Edward Caird; and three fellow-Glasconians have contributed to this volume: James Cappon, professor emeritus of English in Queen's University, R. M. Wenley of the University of Michigan, and J. Muirhead of the University of Birmingham. All the other contributors were at the time of writing filling chairs in philosophy in various Canadian Universities.

A. S. Ferguson, in "Plato and the Poet's *Eidola*," argues that Plato excluded the poet from his ideal city-state (*Republic*, X) because poetry releases the emotions "from due subordination to the rational part" of the soul (148). In the Kallipolis "there cannot be two kings" (152).—G. S. Brett, in discussing "Aristotle's View of Tragedy," understands the *catharsis* which tragedy achieves not as a "purgation experienced by the audience" (170), but as the concrete presentation in action of "the conflict between man's variable nature and the laws which rule him inexorably . . . *freed from all that is confusing and irrelevant*" (177).—H. Carr contributes an essay on "The Function of the Phantasm in St. Thomas Aquinas," according to whom "the intellect cannot think without at the same time turning to the phantasms of the thing thought" (180), *i.e.*, to the mental images.—In "The Development of the Psychology of Maine de Biran," Norman Symons traces Biran's unsuccessful attempt to found

a doctrine of the freedom of the will on psychology. But Symons argues that "the psychology of the future may rightly be expected, as a matter of intellectual sincerity, to reconcile these opposed demands within a theory which shall combine scientific merit with the age-long claim for freedom of the human heart" (253).

From another source also comes an appeal "to the highly trained psychologist and philosopher, for assistance in dealing with the intricate problems which have to do with human relations and human aspirations" (297). In "Some Present-Day Tendencies in Philosophy," J. M. MacEachran depicts an ever-growing sympathy between science and philosophy, due to an increasing humility on the part of each, engendered by a growing spirit of scepticism, not indeed "the scepticism of despair, which threatens to upset the whole world and undermine our faith in the very possibility of knowledge. It is more akin to a healthy sense of humor, which serves to chasten any idea of finality so far as our present knowledge is concerned. And in no sphere is a sense of humor more necessary. For it enables us to see the possibilities of further adventures into new and romantic worlds, which cannot fail to increase our interests and stimulate our efforts" (279). For "it may be that the Absolute grows and develops and registers achievements, and the searcher after truth, scientist or philosopher, may play a real part in the way of making some contribution to this higher development of the world of values" (289). Indeed "there has been so much discussion on the subject of 'relativity' recently that one is left with serious doubts as to the existence of 'ultimate things' or an 'Absolute' in Bradley's sense. Perhaps 'ultimate things' are only relatively ultimate and the 'Absolute' is only relatively absolute, which is the same as saying that these are only working hypotheses which we make use of to systematize our knowledge and our experience" (283). But, we may ask our author, if we have only a 'relative absolute' as our guide, do we know where we are and in which direction to turn to get out of the woods? It was only after the invention of the compass that Columbus ventured across the Uncharted Seas. And if he was mistaken in thinking that the land immediately west of Europe was India, he was at least correct in the basal assumption which made the voyage across the Atlantic a Glorious Adventure and not a Mad Prank—that by going west you will reach east. But what if one have no compass, or even polar star? "It may be that the Absolute grows and develops," but how, pray, are we to know that the Absolute is 'growing' in the right di-

rection? We do not get much help, it is true, from Green's "timeless consciousness (which is) beyond the form of Thought" (21) or from Bradley's "cosmic Absolute which is beyond Thought as it is beyond everything else" (21). But these conceptions are (as Cappon points out, in his essay on "A School of Idealism"), uncongenial to the Caird tradition (no less perhaps than they here are to MacEachran). Dr. Watson emphatically rejects the Absolutism which "leads to Mysticism, the doctrine which virtually abolishes all relations, even the relations of subject and object."[1] "As an absolute whole it must be infinite, not as excluding all finite determinations in the way of quality or quantity, but because it is an absolutely complete whole."[2] "An Absolute in which all the distinctions are abolished by which the world of our experience is redeemed from chaos and vacuity, cannot be regarded as the true principle of the universe."[3] It is to the Absolute so conceived, and not to Dr. Watson's conception of it, that MacEachran refers when he speaks of battling "for a new democracy in philosophy, for the rights of the individual as against the autocracy of the Absolute which persisted in swallowing up the individual without regard to his successes, his failures, his hopes and his fears" (285 f.). With the desire to find in the Absolute meaning for our aspirations, hopes, failures even, one can readily sympathize. Perhaps even Dr. Watson's Absolute, in whom there is change, but whose change "must not be confused with a transition from lower to higher," since its changes "must be due to nothing but itself,"[4] may seem at first sight to be incompatible with progress in any vital sense, but it is to be noted (a) that Dr. Watson expressly asserts that all our finite experiences must find their place in the Absolute, so that it becomes merely a logical question of synthesizing the ideas of 'progress' and of 'wholeness,' both of which Dr. Watson admits; and (b) that a Relative Absolute which gives no hint as to ultimate value is as destructive of all but relative values, and therefore of any vital idea or hope of progress, as is the Bradleyan Absolute against which MacEachran rightly protests.

As J. Muirhead puts it in his essay on "Emergent Realism," when speaking of Croce and Gentile, "If History does not mean the actualization of something that has eternal reality beyond change in time, if it does not mean in Russell's realistic phrase bringing more of

[1] *The Interpretation of Religious Experience*, Vol. II, p. 250.
[2] *Op. cit.*, pp. 43 f.
[3] *Op. cit.*, pp. 234 f.
[4] *Op. cit.*, p. 44.

God into the world, it is difficult to see what it means" (336). And of Emergent Realism he asserts: "Either we must interpret it [reality] strictly in terms of motion or Space-Time substance, in which case the question of a nisus and of 'emergency' does not arise; or we endow it with an attribute of anticipation of what is not yet, but has the capacity of becoming, which transforms it into something quite other than the Space-Time either of common sense, of physical science, or of Alexander's philosophy. . . . What it is difficult to understand is a philosophy which, admitting the element of nisus, yet stops short of the principle it implies: namely that the beginning must be interpreted by the end, not the end by the beginning, and that the beginning of things must somehow not be less than their emergent perfections" (339 f.). Alexander also speaks of furthering "the coming of the next perfection" by faithfulness to ideals; "but by conceiving of these ideals . . . as without immanent relation either to the beginning or end of the process he surrenders the ground," Muirhead claims, "for such a faith and severs the connexion between morality and religion" (341).

In a similar vein, James Gibson Hume, in "Evolution and Personality," finds the conception of a 'natural law of evolution' "breaking into two quite discordant parts. In so far as we stress 'natural law' we think of physical nature and assume that the end will be on the same level as the beginning. But when we say 'of evolution,' we slip away from the physical world and its equivalence in cause and effect and we run over into the moral world of progress" (314).—One can, however, imagine the realist replying that if the Absolute's changes "must be due to nothing but itself" and if "the beginning of things must somehow not be less than their emergent perfections" we seem to be back at "equivalence." Somehow the emergent perfections must be greater than their beginnings if we are to have real progress; for unless the end is other and *more* than the beginning, there would seem to be no reason why we should not interpret the end by the beginning as readily as the beginning by the end. And yet the beginning must be *not less* than the emergents unless we are to have creation out of nothing. Here is an antinomy after the nature of those which it delighted Hegel to depict as, by their inner contradiction, compelling thought to harmonise them in a higher synthesis.—Hume would substitute for the self-contradictory notion of a 'natural law of evolution' the conception of "constructive idealistic development," by means of conscious indwelling purpose, since "consciousness

itself is what is most directly, most certainly known. . . . In any case we will need consciousness both to discover and to prove reality wherever or however we claim to reach such reality" (322). He concludes that the theistic hypothesis—belief in a personal God as a corollary to belief in human personality—"is a more adequate and satisfactory explanation of the facts . . . than materialism or pantheism" (329 f.). With this rejection of materialism—in so far as it fails to take due account of consciousness and purpose—we have seen reason to agree; but, as we shall see later, his condemnation of pantheism is too sweeping if it means that we are to think of God as 'apart from' man.

A similar conception of "an infinite number of subjective centres all realizing, in different stages of development, the same system of rational ends," but which "do not affect by direct action one another's development," so that "the monads are in truth 'windowless'" (272 f.), is worked out by H. H. Wright in "A Plea for Eclecticism." He is seeking a synthesis of the main currents of contemporary philosophic thought—*viz.* idealism, realism, pragmatism, and intuitionism—and thinks to find it in the form of experience implied by purposive action (260 ff.). 'Purposive action' is the key also to the relation between will and the physical world. Matter is external to the particular systems of rational purpose because it is common to all, a common medium, "equally available for all individuals," through which the product of one individual's activity may become the property of all and thus part of "the objective order through which the rational will of man gains expression" (265 f.). "We are forced therefore to maintain the reality of the *physical system* as a factor limiting the activity of intelligent individuals, yet through the uniformity and constancy of its processes serving as a medium for the communication and conservation of individual experiences and thus making possible co-operative human achievement" (273); while on the other hand we are required to think of a "universal consciousness" (274) whose function it would seem to be to guarantee the reality of the *subjective aspect* of experience—the system of rational ends—"before consciousness came upon the scene or . . . after human intelligence has been extinguished in the inevitable sequence of cosmic processes" (273). Such a "universal consciousness" is, however, little more than a *deus ex machina*. Wright, like Hume, is taking his 'persons' or 'subjective centres' somewhat too abstractly. In his *Gifford Lectures* Dr. Watson argues "that such an abstract indi-

vidual," (one, that is, "whose nature it is to be independent of all other things"), "is a mere fiction." Hence he conceives of God (who for him is identical with the Absolute—he shares none of Bosanquet's uncertainty on this point) not as "personality" but as "self-conscious reason" and holds that "nothing less will adequately characterize the nature [even] of man" (II, 29 f.). The unity of self-conscious reason is to be posited not simply to save Idealism when the ice-age shall have arrived, but because it is a necessary way of thinking of reality. In this universal reason man and God are one; but this is not a unity which "abolishes all the individuality and independence of the several beings which it comprehends within itself; [rather] it differentiates itself in beings which are individual, just because they are capable of living in the whole" (*ibid.*, 241). Here again we find what we noticed above, when considering Dr. Watson's attitude on the problem of progress, an attempt to bring together and do full justice to both sides of the question, through the recognition of the fact that there are *two* sides just because they somehow go together to make *one*. One may feel that he has not adequately satisfied the motives that have led to the revolt against Absolutism, and to the emphasis on human freedom and initiative and on the possibility of 'vital' progress which are coming to be known as Meliorism or Progressism; but he cannot be charged with ignoring the problem or impatiently waving it aside. "When one man is said to influence another, the relation is not to be compared," he says, "to the communication of motion from one body to another; for, so far from it being true that the action of mind upon mind destroys freedom and individuality, there can be no such influence without freedom and individuality, [since] as a rational being, man can accept nothing but what seems to him reasonable. . . . When therefore we say that the Divine Spirit is immanent in the human spirit, we must not think of the relation as that of two separate and distinct individuals, one of which acts upon the other irrespective of the response of his own spirit. . . . The influence upon man of the indwelling spirit of God is in essence identical with the influence of one human mind upon another: it operates by bringing to light that which is essentially reasonable."[1] And again, "Human life in all its aspects, theoretical, practical, and productive, is essentially purposive. We live in ideals, and these ideals are the mainspring of all our efforts. Truth, goodness and beauty, as the partial realization of absolute ends, are principles immanent in the

[1] Watson, *op. cit.*, pp. 247 f.

human soul and yet they are unrealized ideals. . . . In a completely developed spiritual life they would be realized in unity and harmony with one another. This absolute unity . . . is what we mean by God; and therefore God must be conceived as the principle, identification with which is the motive and goal of our total spiritual activity. Thus God is at once present with us in all our spiritual endeavour, and yet infinitely transcends our highest endeavour."[1] Meliorism could hardly sound a more challenging call to unremitting effort than that.

Very striking is the resemblance between Dr. Watson's conception of God as here given and Plato's conception of 'the Idea of Good' as interpreted by Rupert Clendon Lodge in his essay on "Moral Validity: a Study in Platonism." According to Plato it is "ultimate reality which furnishes the final touchstone for human value-judgments" (66). Lodge therefore furnishes us with a discussion of Plato's theory of 'Ideas' and comes to the conclusion not only that "the ideal qualities apprehended by the dialectician . . . constitute [in Plato's estimation] an interconnected totality, a single ideal system" (83); but also that all 'Ideas' have this in common: "One and all, they represent attempts at extracting from sensuous experience all relevant elements of meaning-value and at interrelating these elements in such a manner as to secure harmony, consistency, unity" (85). "But this principle of Ideality is . . . what Plato calls the Idea of Good, so that every particular Idea is a particular determination of the Idea of Good, . . . applied to a particular, limited group of sensuous experiences" (85f.). "The difference, then, between a particular Idea and the Idea of Good, is the difference between the more particular and the more universal . . . application of one and the same principle" (87). At a certain level of thought indeed, "which appears to correspond to the 'third stage of intelligence,'" there does appear a conflict between Ideas, "as in more modern times a conflict has been recognized between . . . 'science' and 'religion,' or 'art' and 'morality,' . . . or 'mechanism' and 'teleology'" (89); but "when the final stage of philosophic insight has been reached, it becomes sufficiently clear that each Idea—*e.g.*, science, religion, art, morality, etc.—now represents the whole of philosophic insight turned in a particular direction, and it becomes plain that . . . it is one and the same insight which is represented in each case" (90). "The absolute Idea which furnishes, as we have seen, the last and highest court of appeal, the ideal Experience which we conceive under the

[1] *Ibid.*, p. 249.

form of God, . . . transcends our experience, even at its best and deepest. Our experience enters into the ideal Experience and draws from it whatever significance our human thought and life come to possess; but it does not and can not exhaust the significance of the ideal Experience" (113).

This is the tradition which Dr. Watson inherited, partly directly from Plato, partly through Hegel. For, like his teacher, Edward Caird, Dr. Watson is a careful student of Greek thought as well as a scholarly expositor of Kant and Hegel. In his essay, "A School of Idealism," James Cappon traces the influence upon the thought of Caird and his school of Hegel's idea "that the principle or character of the Whole manifests itself in our knowledge," since "Thought in the full concreteness of its movement [is] at one and the same time the distinction and the relation of things, . . . a consciousness in which the self and the world are bound togther in a form of unity which involves the ultimate unity, the infinite element, in the consciousness of the finite" (12 f.). For Caird this was a central principle, as it is also for his pupil. Caird indeed recognized and acknowledged a conflict of ideas, sometimes an apparent 'antimony;' but he was confident of one thing. "'The essential unity of all things with each other and with the mind which knows them, is the adamantine circle, within which the strife of opposites is waged, and which their utmost violence of conflict can not break'" (14). "The religious consciousness, properly understood, is but a form of the ordinary consciousness of things, the consciousness in which the self, the world and God are bound up together" (35). Despite its familiar use of the word 'Absolute,' which suggests a Finality so opposed to the frailty of human experience, and a word which Bradley has made a synonym for all that is mysterious, unthinkable, and non-human—despite this, Caird's doctrine won the admiration and devotion of many a pupil because of "the ease with which [it] could be related to the ideals of humanity and to what is great in the past" (20).

This was the inheritance which Dr. Watson brought with him to this continent over half a century ago. Here, as R. M. Wenley points out in "Beati Possidentes," he found American philosophy (both north and south of the border), applied, by force of circumstances perchance, "to politics, to morals, and to theology . . . while traffic with first principles from purely speculative interest languished"(40). As a sequel, however, to the abortive German revolution (1848) a new movement had begun at St. Louis where were associated H. C. Brock-

meyer, W. T. Harris and others, and later G. Stanley Hall. "Within four years of his arrival . . . Professor Watson had associated himself with this group," (58); and "if the younger generation . . . enjoy a freedom rare or impossible fifty years ago, . . . let it pause to return thanks for the patience and courage of men like Professor Watson" (61).

L. P. CHAMBERS.

CORNELL UNIVERSITY.

NOTICES OF NEW BOOKS.

Matter, Life, Mind, and God. By R. F. Alfred Hoernlé. New York, Harcourt, Brace and Company, 1922.—pp. xiii, 215.

This book is a substantial reproduction of a series of lectures delivered by the author before audiences composed of those who were for the greater part without technical training in philosophy. The discussion, therefore, aims to do nothing more than present some of the major tendencies of philosophical thought with reference to the problems suggested in the title, and to do this in a semi-popular manner which would make the discussion intelligible to such audiences. The author's part, as he conceives it, is that of the showman; and he presupposes on the part of his hearers and readers only an intelligent curiosity concerning the problems under discussion.

The content of the book can best be put in the words of the author's preface. "The plan, or pervading interest, which runs through the lectures is to review some of the chief movements in contemporary thought, in order to see whether, in spite of their manifest diversity and even their conflict, they do not exhibit traces, at least, of a coherent pattern; whether they do not hold out the promise and possibility of unity in our spiritual life. . . . The precise nature of this *synoptic* problem is set forth in the first lecture, which describes the profound and many-sided influence of Science on modern Thought, and then goes on to exhibit the limitations of the scientific concept of 'Nature' as compared with the whole 'Universe' of human experience. The second lecture gives an account of the revolt against 'materialism' in the Philosophy of Nature, of which A. N. Whitehead is the brilliant leader. . . . The main point is that physical theories are being brought to the essentially philosophical test of a fresh analysis of the actual data of our experience. This is shown, in the third lecture, to react on the antithesis of mechanism and vitalism, facilitating the recognition of life as a distinct type of phenomenon, open to empirical study without needing to be explained away into physics and chemistry, or else referred to a hypothetical vital force or energy. . . . The fourth lecture, after an historical survey of theories of mind, and a discussion of the causes of the present chaos in psychology, attempts to support the suggestion that the concept of 'behaviour,' freed from the exaggerations and prejudices of friend and foe which now beset it, may offer a basis for the reconciliation of the divergent tendencies which now divide psychologists. The fifth lecture is devoted to reviewing the attitude of philosophy to religion and theology, and the main tendencies in the Philosophy of Religion, more especially the revival of Theism" (pp. ix–x).

The task which Professor Hoernlé set himself in these lectures is a very worthy one. To make philosophy speak in terms that are intelligible to those who lack expert philosophical training is an undertaking which is certainly worth the effort involved. For the problems of philosophy are, after all, the

problems that are of most vital concern to human experience, and one does not have to be an expert in the language to be interested in the content; and if the best philosophical thought of the day can in the popular mind be made to converge upon these problems in an intelligible manner much is to be gained thereby, both for philosophy and for a sound public opinion. The task, however, is by no means an easy one. It requires not only a thorough comprehension of current philosophical tendencies, but also a gift of expression that runs with limpid clearness. Both of these requirements Professor Hoernlé meets admirably. He is thoroughly at home in the subject-matter, and his style is forcefully simple and direct. He has carried through a difficult undertaking with a very great degree of success. I know of no book which will more readily and more sanely bring the general reader into touch with the present philosophical setting of these four basal problems than the present volume. It is *synoptic* in the best sense of that dangerous word, it focusses attention upon some of the deeper currents of the best philosophical thought, and it is quite largely untechnical in its terminology. Differences of opinion may arise, to be sure, in respect of some of the author's suggestions—though the present reviewer finds himself in almost complete agreement with these. But there can hardly be serious question that he has been notably successful in attaining his main purpose.

G. WATTS CUNNINGHAM.

UNIVERSITY OF TEXAS.

Die Vorsokratiker. Von GUSTAV KAFKA. München, Ernst Reinhardt, 1921.—pp. 163.

Sokrates Platon und der Sokratische Kreis. Von GUSTAV KAFKA. München, Ernst Reinhardt, 1921.—pp. 157.

These two books form part of the *Geschichte der Philosophie in Einzeldarstellungen* which Dr. Kafka is editing. We are presumably arriving at the time when the history of philosophy can only be satisfactorily achieved by many individuals in collaboration. While there are obvious objections to this method, there are also many points in its favour, among which must be reckoned the higher degree of specialization which can be brought to bear on each period. Dr. Kafka has practically taken the whole of ancient western philosophy into his own hands, for in addition to the parts now referred to, he will be responsible for those which cover the work of Aristotle and the hellenistic schools.

The field of ancient philosophy has been so extensively studied by philologists and philosophers alike that it is not easy to estimate exactly the value of a new contribution which aims at a general survey but does not make its appeal to those who wish to escape the labor of close reasoning. The method of the writer, since he is both author and editor, deserves the notice of all book producers. Each volume is small and easy to handle. The text is free from all distractions except the numbers of the notes; a bibliography is appended to each volume and is obviously select, naming only forty-two items for the Pre-Socratics and fifty-four titles for the period of Socrates and Plato;

the notes furnish an excellent apparatus for verification as they refer to original works extensively and to secondary sources when these have special significance. On the whole the plan can hardly be improved, allowing as we must for the comparatively small scale on which the work is constructed.

The historian requires above all things an eye for essentials and a sense for correct proportions. He must define the focus of each movement sharply and supply enough of the fringe to make clear the continuity which most periods of thought exhibit. Judged from this point of view Dr. Kafka has achieved extraordinary success. No one would write, or perhaps wish to write, a history of ancient philosophy in which no statements could be disputed and no judgments adversely criticised. Dr. Kafka sometimes challenges contradiction by boldly accepting a disputable conclusion (*e.g.*, that Zeno denied the reality of space); sometimes at the end of an exposition, he leaves us conscious of what has been omitted and somewhat under-nourished in that particular section (*e.g.*, he ignores the recognition by Parmenides of the "way of opinion"); but on the whole the essentials are adequately presented and the points of view are sane and well supported by the evidence.

In the first work Dr. Kafka follows the inevitable path from Thales to Democritus. We may say of this part that it is well-done, but we may doubt whether it was worth doing again. The catalogue of early views on water, air, the astronomical circles and other familiar topics needs no more reproduction: what we still want is a rational exposition of certain problems which ran their course through a century and a half of brilliant dialectical thinking; we want to know how these people went so far without the over-rated "experimental methods" of later times; we want a lucid exposition of the method which was the product of a native genius for "thought experiments" and still puts Democritus among the great physicists, joins Philolaus with Einstein and unites Plato with Bertrand Russell. Perhaps we want too much: for what we have received we give thanks. Dr. Kafka always keeps one eye on the moderns and makes good use of analogies that reflect the brilliance of Gomperz: but we could forgive the omission of all analogies and all "anticipations" if we could get in exchange something better than the traditional chronological parade of "early thinkers."

This ungrateful discontent (which Dr. Kafka in no way deserves to suffer) is much increased by the second volume. For the treatment of Socrates (or shall we say Socratism?) and of Plato shows exactly the quality which might have made the first volume a joy forever. Here we have a subtle logical evolution which pursues its way, unobtrusively, through the facts; we have recognition of many a finer point missed in the usual expositions; we have a unity introduced into Plato's thought which seems to be neither the product of onesided dogmatism nor the result of startling and paradoxical ideas about "earlier and later" Platonism. Dr. Kafka grows sarcastic over the attempt of other writers to find the "positive results" of Plato's work (p. 98). For Dr. Kafka Plato is in perpetual movement, ceaselessly following the divine quest, always quick to see where the argument fails and always craving more

reality. That is assuredly the real Plato, and to have the fact recognized by a German author is a cure for pessimism. With this excellent start Kafka travels easily from the Socratic universals (which he rightly takes to be primarily ethical and rooted in a logic of conduct), on through the constructive period dominated by "ideas", and out again at the "threshold of old age" when the *Laws* shows us Plato's 'idealism' growing more truly ideal as it reconciles itself with the middle ways of thought, the middle class of society, and all the 'via media' which is the great highway of humanity, the way up and the way down. We will not enter into details or discuss the innumerable points which suggest the author's continual sense for many possible phases, indicated in the notes by the names of Lotze, Natorp, Ritter, Raeder, Zeller, Gomperz, *et alii*. Perhaps every man ought to be allowed his own Plato, but as most of us follow some leader it is pleasant to think that Dr. Kafka will spread abroad a view of Platonism at once sane and adequate and inspiring. For the production of a small book is a great task and a great responsibility; it will penetrate where the large treatises never go; it will leaven the minds of young men and become the unknown cause of 'schools of thought': above all it will make or mar that current of humanism which is more potent in the life of a nation than the exact scholarship on which it depends. These books are likely to have, in their own country, an influence which is great, though it may be indefinite, and Dr. Kafka is to be congratulated on rendering good service to the cause of philosophy by his enterprise as editor and author.

G. S. Brett.

University of Toronto.

Dialogues on Metaphysics and on Religion. By Nicholas Malebranche. Translated by Morris Ginsberg, M.A., with a Preface by Professor G. Dawes Hicks. New York, The Macmillan Company, 1923. pp. 374.

Mr. Ginsberg has performed a genuine service in presenting us with this lucid translation of this very lucid author. The works of Malebranche, and this systematic exposition of his philosophy in particular, are of interest, not only from the point of view of the history of Cartesianism and Platonism, but from the constructive standpoint as well. From the latter standpoint, Malebranche's epistemology will be of chief interest at the present time, with his metaphysics in the second place and his 'Calvinistic' theology lagging considerably behind. Malebranche is chiefly known in the histories of philosophy as the propounder of the system of occasionalism, but I should argue that his chief interest from the contemporary standpoint is in the field of the theory of knowledge. The significance of occasionalism is sometimes over-rated. It did not arise so much from a critical attitude towards the concept of causality as from a reckless emphasis on the omnipotence of God. Mr. Ginsberg urges against Novaro, the author of a valuable German thesis on Malebranche, that he (Novaro) "entirely ignored the immense difference that really subsists between Hume and Malebranche in regard to causality. Malebranche does not, in truth, deny a necessary connection between cause and effect. He

simply insists that such necessary connection is to be found only between one unique cause, namely, God, and its effects. . . . It is true that Malebranche himself admits that the divine power is inexplicable; but throughout he takes refuge in the thought of God's omnipotence and insists that between the will of God and its effects there must be a necessary connection, since God's volitions are bound to be efficacious" (p. 56). Mr. Ginsberg's remark ought to set at rest those ever-recurrent attempts to connect Hume and Malebranche. Malebranche had no thought of discarding the conceptions either of causality or of substance, a fact which may be counted either to his credit or his discredit according to one's convictions. His connection with Hume is rather that they both belonged in the same world of ideas, in the same clear 'rationalistic' atmosphere which is the strength of the philosophy of the Seventeenth and Eighteenth Centuries.

The present *Dialogues* strike me as especially valuable as reading-matter for students who are trying to think their way to clarity on the fundamental problems of epistemology and metaphysics. The first six of the fourteen dialogues, in particular, contain much valuable epistemological matter which is so clearly and pictorially expressed that the beginning student is sure to be fascinated. These dialogues will no doubt be used along with the works of Berkeley and Hume by way of introduction to epistemology and no doubt Malebranche will come to stand to many a student as the outstanding example of the awful consequences of committing some epistemological fallacy, such as "representative perceptionism" or "hypostatization of concepts." The fact is that one can get a very intelligible theory of knowledge from Malebranche by substituting for the emotional and religious term, *God*, the purely epistemological term, *Universal Reason*. That we see all things in God means that we see all things with the aid of Universal Reason the content of which consists of certain eternal ideas. These eternal ideas or essences underlie and determine the world of concrete existence. Their existence is more certain than is the existence of particular objects. "It is much easier to prove the reality of ideas, or if I may use your terms, the reality of this other world filled with the beauties of intelligence than to prove the existence of the material world. . . . Ideas have an eternal and necessary existence, but the corporeal world exists only because it pleased God to create it. So in order to see the intelligible world, it is sufficient to consult reason which contains the ideas, or the eternal and necessary intelligible essences, and this can be accomplished by all minds that are rational, or are united to the infinite reason. But in order to see the material world, or rather to judge that this world exists, since this world is invisible in itself, it is necessary that God should reveal it to us, for we cannot see his arbitrary volitions in the necessary Reason. Now God reveals the existence of his creations in two ways, by the authority of the sacred writings and by means of the senses" (p. 75). The position of Malebranche is thus very similar to that of another more worldly Platonist, Mr. Santayana. In both cases belief in the outer world is a matter of faith, in the one case of Christian faith, in the other case of animal faith.

Malebranche's clear differentiation between the psychic, the physical and the ideal reminds one of the way in which that very clear and painstaking writer, Edmund Husserl, draws the same distinction. Malebranche is akin to Husserl also in the matter of *logical absolutism*. Man "knows nothing except by the light of reason, by which I mean the universal Reason, which enlightens all minds by the intelligible ideas which it reveals to them in its ever-luminous substance. . . . It is the Divine Word which enlightens us by means of the intelligible ideas which it contains. For there are not two or more wisdoms, two or more universal reasons. Truth is immutable, necessary, eternal, the same in time and in eternity, the same in us and in strangers, the same in heaven and in hell. The eternal Word speaks the same language to all nations, to the Chinese and Tartars as to the French and Spaniards; and if they are not all equally enlightened, it is because they are not equally attentive, it is because they confuse, in varied degrees, the particular impulses of their self-love with the general responses of inner truth. Twice two are four for all peoples. All understand the voice of truth which bids us not to do to others that which we do not wish to be done to ourselves" (p. 101). One may well ask whether there is not a residuum of truth in this strict logical abolutism which our pragmatists and psychologizers have failed to grasp. Malebranche takes his stand on the necessary truths of mathematics and ethics and makes it clear that such truths, at least, have an eternal validity which is entirely independent of our mental processes.

Students of metaphysics and theology will also find much of interest. Among the points clearly set forth one finds the distinction of mind and body, in which Malebranche closely follows Descartes, a clear statement of the Ontological Argument in its most radical and thought-provoking form, the system of occasionalism applied not only to the relation of mind and body but to causation in general, the attributes of God, the distinction between intelligible extension and the divine immensity, a purification of the idea of God of anthropomorphic conceptions—"God is neither good, compassionate, nor patient in the vulgar sense of these terms. These attributes as they are ordinarily understood are unworthy of the infinitely perfect being" (p. 321),—a discussion of the question as to why the infinitely perfect being created a world of finite and imperfect beings, a theory of evil on the basis of the *generality* of the decrees of Providence, discussion of the relation between the divine will and divine reason (divine will is based on divine reason and not *vice versa* as Descartes taught), and of the simplicity and fecundity of the ways of God in contrast to the indefinitely large number of his creations. Certain special theological questions are also discussed from the austere Augustinian standpoint which caused Malebranche to be suspected of Jansenism during his life time.

With regard to the translation itself, I find nothing to criticize. A new translation of the *Recherche de la vérité* would also be of value, especially considering the strong interest in epistemology which is characteristic of the times. The *Traité de Morale* ought to be translated also, not only because it is one

of the first (if not the first) modern treatises on ethics, but also because there are ideas in it of permanent worth. The times seem propitious for a revival of interest in the rationalistic philosophy of the Seventeenth and Eighteenth Centuries and someone who would continue the work of Mr. Ginsberg would be rendering a real service. The only deficiency I observe in the present work, and it is not a serious one, is the absence of a bibliography. The student taking up the study of Malebranche ought to be reminded that there are certain valuable works on him in the French language; I recall the works of Joly and of Ollé-Laprune as well as that splendid number of the *Revue de métaphysique et de morale* (in volume XXIII) in honor of Malebranche. I presume, however, that Mr. Ginsberg proceeded on the logical assumption that those who had to rely on a translation would not be interested in further literature in a language which they, presumably, did not understand. But his very useful book will be utilized by many who could read the original, especially in view of the present notorious lack of a good French edition of this or of any other of the works of this eminent French philosopher.

W. C. SWABEY.

NEW YORK UNIVERSITY.

La crisi del pensiero moderno. By ALESSANDRO CHIAPPELLI. "Il Solco," Casa Editrice, Città di Castello, 1920.—pp. xxvii, 376.

The present crisis calls for the form of philosophic thought that will best meet the needs of modern life, and supplant the intellectual tendencies that culimated tragically in the Great War. In the opinion of the author, this is Idealism. Everywhere, both in Europe and America, he finds evidence that nineteenth- and early twentieth-century naturalism, mechanism, positivism, empiricism and agnosticism are giving place to Idealism. (Introduction, and pp. 237–284.)

There are two principal types of contemporary Idealism, both in Italy and elsewhere:—the 'transcendent,' of which Platonism is the prototype, which makes thought inherent in being; and the 'immanent,' which affirms that thought itself is creative and constructive of being. 'Immanent Idealism' in Italy has two varieties: the 'philosophy of the spirit' (Croce *et al.*) which derives everything from spiritual activity and identifies philosophy with history; and 'activism,' which puts more emphasis on will and is virtually neo-Fichtean (pp. x–xv). The author's Idealism is synthetic. With the 'immanentists' he recognizes the productive activity of mind manifested in the historical process; but he takes the side of 'transcendentism' when he affirms that reality is in large part independent of the thinking finite subject. The historical process goes on in time, it is an endless process in the direction of the infinite, but it never attains infinity; so there always is something external to it. It is therefore necessary to affirm an Absolute Mind or Spirit, which includes both finite subjects and objects in an organic whole, transcending space and time.

Idealism alone can solve the problem of the one and the many. An abstract monism and an abstract pluralism are equally impossible. Only in life and consciousness are unity and multiplicity combined, and so the world must be

a living and dynamic spiritual order (pp. 145–147). The solution of the problem of progress is eclectic. With Bergson the author affirms that there is continual creation for which a purely naturalistic evolution could not account (pp. 207, f.); with Windelband and Rickert, that historical laws are forms of value (p. 209); with Hegel, that each age is the expression of a different value of human life (p. 214). The root of religious life, as with Schleiermacher, is found in the feeling of dependence upon a superior and infinite power; this affords man increasing spiritual liberty in his unending progress toward the infinite and divine (pp. xxiii, 233). While this philosophy on the whole reminds one of Bosanquet, there are various points of difference. For one thing, a more independent place is given to finite individuals. This becomes manifest in the advocacy of personal immortality. Our subjective life is not only, as Bosanquet affirms, a necessary and essential contribution to the universal experience, and therefore indispensable to ultimate reality; it also has a unique value as a finite personality that cannot enter into any other experience—not even (if I rightly understand the author) that of the Absolute (pp. 370, f.). The general drift of scientific thought and the evidence of psychical research are at least favorable to belief in personal immortality (pp. 302–305) and much is made of moral arguments similar to those of the *Critique of Practical Reason* (pp. 306–309, 372–375).

Forty pages are devoted to an interesting analysis of American philosophy. It is far from true that American thought is a mere reflection of European culture. America has produced strong and original thinkers, especially in political thought. American Pragmatism and New Realism are influencing Europe. Notwithstanding the fact that the general conditions of life have never been favorable to its free development, American philosophy has had a continuous history. In every generation it has revealed two opposing tendencies—the one mystical, altruistic and idealistic; the other practical and opportunistic. Recent American Idealism has advanced beyond the "rigorous neo-Hegelianism" of Great Britian and Italy. This is illustrated by the spirit of Kantian criticism shown by Schurman and Creighton, the "genially theistic" interpretation of Royce, and Ladd's study of the physical sciences and their special problems (p. 82). Pragmatism is commended for its peculiarly American emphasis on personal independence and its faith in human capacities to conquer the external world. But pragmatism has been losing ground since the death of James, who in the *Pluralistic Universe* forsook the pragmatic emphasis upon fluidity and progress for a static pluralism colored with mysticism (p. 90), and so prepared the way for the rise of the New Realism (p. 94). In one brief passage the author asserts that the "large Humanism" of Dewey and the Chicago School "does not give an adequate response to the demands either of reason or of life"; that "it is futile to set forth a theory of knowledge and of human life without either basing it upon a general conception of the universe or a critical verification of the universal and creative function of active thought" (p. 91). (One wonders whether the author has read *Creative Intelligence* and the *Essays in Experimental Logic* which would seem in some

measure to meet the second of these requirements.) American New Realism meets with high praise from the author. Its assertion that reality is independent but not extraneous to human reason affords man a larger sense of freedom. Far from being a mechanistic materialism, it asserts the reality of secondary qualities and approximates Cambridge Platonism. It makes us aware that external reality is far richer than the meditation or introspection of the solitary mind "which is only a single note in the eternal and infinitely varied poem of the universe" (p. 100). In view of these points of excellence he lightly passes over what from his point of view must be objectionable tendencies in the new realism—its love of abstract analysis, and its reduction of reality to a number of abstract elements independent of absolute mind.

Signor Chiappelli is very broad in his philosophical interests and sympathies. He has read widely in British, French, German and American philosophy, as well, of course, as that of his own country. He rivals Bosanquet and Pringle-Pattison in his ability to appreciate philosophers of diverse schools, and to enrich his own Idealism thereby without sacrificing any essential principle. While less technical than the philosophers just mentioned, he is more successful in popularizing and humanizing a standpoint similar in most respects. In Italy, one feels sure, this type of Idealism, thanks to Signor Chiappelli, must be widely known among cultivated persons who are not professional philosophers, and never mistakenly supposed to be inconceivable by the lay mind or to be coldly aloof from the problems of practical life.

WILLIAM KELLEY WRIGHT.

DARTMOUTH COLLEGE.

Primitive Mentality. By LUCIEN LÉVY-BRUHL. Authorized Translation by LILIAN A. CLARE. New York, The Macmillan Company; and London, George Allen and Unwin, 1923.—pp. 458.

The French edition of this work was reviewed by me in the PHILOSOPHICAL REVIEW of last July, pp. 419–421. The translation has been very well done. It has gained in literary form and intelligibility by being somewhat free in places, without serious loss in accuracy. The English diction on the whole is excellent; but why "second causes" (pp. 36, 53, 57) instead of "secondary causes" (as elsewhere); why "orientated" (pp. 32, 37, 95 and *passim*) instead of "oriented"; and why "technicology" (p. 443) instead of "technology"?

This book in translation will naturally be read by many who are unacquainted with Professor Lévy-Bruhl's earlier work, *Les fonctions mentales dans les sociétés inférieures*, of which this is regarded by him as a sequel. However, I believe that the translator is right in affirming that a lack of acquaintance with the earlier work should deter no one from reading *Primitive Mentality* in its English form. To be sure, such a reader will not get a very clear idea of what the author means by "collective representations" and the "law of participation," notwithstanding the attempt to enlighten him regarding the former in the Translator's Note. However these are perhaps the two weakest and most debatable points in Professor Lévy-Bruhl's whole interpretation. His general

conception of primitive mentality does not really depend upon them, and can be understood in a general way and accepted or rejected without taking them into consideration. (This is at least my opinion; possibly Professor Lévy-Bruhl would not agree to it.)

Now that it is available in English, *Primitive Mentality* should be studied by all who are interested in comparative religion and ethics, anthropology, social psychology, and the problem of the origin of the categories and of logical thinking. It should be regarded as an indispensable part of the equipment of future missionaries, military and civil administrators, and all others who have to deal in any way with the savage races of the world; it will lead such persons to act more kindly and sympathetically as well as more wisely. Indeed, it is a very readable book, packed with human interest, that will delight every one who has a taste for anthropological literature. The importance which is attached to it in France is attested by the fact that it received a favorable twenty-five page review in the *Revue de métaphysique et de morale* (Avril–Juin, 1922).

WILLIAM KELLEY WRIGHT.

DARTMOUTH COLLEGE.

The Appearance of Mind. By JAMES CLARK MCKERROW. New York, Longmans, Green and Company, 1923.—pp. xvi, 120.

One of the pressing problems of contemporary philosophy is the formulation of an adequate conception of the nature of the self, a conception that shall meet the demands of common experience, of logic, of recent psychological advance, and of metaphysical theory. A large part of our present bewildering array of philosophical disagreements seems to arise from imperfect adjustment of these different points of view in regard to the conscious individual, and any contribution towards a clearing of this conception is an answer to a definite demand. The extremes within which these variations range at the present moment are, on the one hand, the Italian idealists for whom all reality is the manifestation of self-consciousness, and, on the other, certain of the English-speaking realists who would endeavor to be rid of the whole conception of self or subject, both in philosophy and in psychology. Such questions as "Does consciousness exist?", the attempts to analyze mind into a relation between non-mental objects, the rejection of the self as an abstraction akin to the occult qualities of mediæval science: these experiments, regardless of their varying degrees of success or failure, are the expression of an inevitable and essential reaction against the over-confident idealism of the early years of the century.

A recent accession to the ranks of this attempt to interpret facts of experience without reference to a subject of experience is *The Appearance of Mind*, by James Clark McKerrow. It is brief and clear, concise, interesting, and eminently readable. The term "appearance" as used in the title indicates Mr. McKerrow's conviction that mind, as person, as subject, as conscious individual, is not a reality, but "is an inference and a false one from the order of nature as observed in the behaviour of living things." The continual use of

capital letters for purposes of emphasis is quaintly suggestive of English writers of an earlier period, and with all its modernness of thought and phrase, Mr. McKerrow's polemic against the "theory of the subject" is close kin to the revolt of the seventeenth century English thinkers against the assumptions and dogmas of scholasticism. If the opposition seems at times directed against a conception for which it would be hard to find any supporters, a conception which is something of a caricature of any real "theory of the subject," this is not an infrequent or unnatural result of the attempt to combine brevity with directness of controversy. To one reader at least it would seem that Mr. McKerrow's book might have been more effective if he had set forth his thought rather in the form of an interpretation of the meaning of the "subject" than as a denial of its reality. For the writer does not deny "the phenomenal facts" of consciousness, does not dispute that we "seem to ourselves" to be seeing, feeling, thinking individuals, but denies only "the subjective theory founded on these facts," denies that the "Subjects" are *real* Subjects, being actually what they purport to be."

The discussion is divided into two parts, Sense-consciousness and Thought-consciousness, in which sense-consciousness is interpreted as the behaviour of motile organisms in avoiding unsatisfactory living conditions, and thought-consciousness as a specific form of development of this behaviour in which the organism, man, reacts to signs instead of to things. Characteristic of the treatment as a whole is this quotation, from page 107: "The dog, hearing the dinner-bell, does *not* have the 'idea' of 'dinner-bell,' does *not* associate therewith the 'idea' 'dinner,' and then *somehow* turn the 'idea' into a muscular reaction. In the 'situation,' 'dinner-bell,' he has a 'tendency,' 'dinner.'" The "idea" in thought, and the "feeling" in sensation, Mr. McKerrow urges, are assumptions, non-entities, abstractions created by analysis, which have no status in reality. The realities in the situation are various physical and physiological changes and what Mr. McKerrow calls the "viable activities" of a given organism. The organism itself, person or animal or plant, is again, as an individual, an assumption, an inference. Its reality is that of "a series of events." The basis on which the "subject" is reduced to unreality is apparently that of a nominalistic logic. The subject, according to Mr. McKerrow, is a "notion"; objects, thought, sense, belief, experience, these also are "notions." The term "notion" is not clearly defined, but it apparently means a universal or a general concept illegitimately treated as a real entity. The conception of the self which is here criticised is perhaps rather that of substance than that of subject, the conception of a "that which" feels, sees, thinks, etc., and which is in some sense other than its experiences. Mr. McKerrow argues that such a conception could be reached only by a process of abstraction and generalization from observed facts and that it is an unnecessary inference from these facts. He seems, however, to depart somewhat inexplicably from his own principles in his assertion of the ultimate reality of Life with a capital initial. "Life," he insists (page 5), "is not an attribute of Us; we are attributes of Life. . . . We are expressions of continuing Life, the garments it puts on. Life is the

whole, we the part; Life the Reality, we the Appearance." The logical basis for this treatment of life as a real universal is not given. From the starting point of observed facts it is difficult to see how it could be obtained otherwise than by such a process of generalization as that which in the case of the subject gives only a "notion" without reality. Life and Subject, or Mind, would then seem to be on the same level as regards objective validity, and the choice of one rather than the other as the ultimate concept appears purely arbitrary.

For any reader the parts of a book in his own field which will seem valuable and important are likely to be those which present in a new light or with new emphasis conceptions along the line of his own thoughts. In *The Appearance of Mind* the present reader found particularly interesting the insistence, in the discussion of sense-consciousness, on the unity of the perceptual situation, the emphasis, in the discussion of thought-consciousness, on the necessary social reference of thought, and the brief but suggestive analysis and classification of judgments on the basis of the kind of activity whose ground is made explicit in different forms of categorical, hypothetical, and disjunctive propositions.

FLORA I. MACKINNON.

TORONTO UNIVERSITY.

Die philosophische Mystik des Mittelalters. Von JOSEPH BERNHART. München, Reinhart, 1922.—p. 291.

Mysticism is a subject of perennial interest, to some minds one of irresistible fascination. It is a persistent factor in human thought and experience and a perpetual challenge to common-sense and to science. It is variously defined and its forms are manifold. It has no necessary connection with occultism though the two are often confounded. Its essence would seem rather to consist in the nature of the goal and the experience of the endeavour. The true mystic seeks not only a peace that passes understanding, but a knowledge that surpasses all ordinary knowledge, namely, the felicity and certainty of the undivided unity of the finite subject and its transfinite object in the immediacy of an absolute experience. This endeavour implies a philosophical theory which the mystic often reflectively exploits. There is besides a great deal of philosophical speculation which, without directly aiming at the experience, develops a view of things conformable to it and tending to promote it. All this philosophical theory is of the greatest interest to the student, not only historically, but as developing problems, and no period of its history is more instructive and illuminating than that of the Middle Ages.

To the knowledge and understanding of this period Bernhart's little book can be very heartily recommended as a trustworthy and serviceable guide. It is brief, but compact, compendious, but not arid. The material is admirably arranged so that the reader is enabled not only to follow the opinions of the several authors, but to understand their sources, and to trace out movements and something of their intricate interlacings. In a field of this sort there is room, of course, for much diversity of judgment concerning the character and bearings of the teachings reported, and the student would do well to compare

on some of them—for example, the mooted question of the pantheism of Meister Eckhart—the views of other writers, such as Inge. But this may be said of Bernhart, that his work is based not only to a large extent on first-hand acquaintance with the sources, but also on the results of much recent research into the philosophy of the Middle Ages. His bibliography, which includes three of his own monographs on Eckhart and the "deutsche Theologie," runs up into over seventy titles and his notes extend to over six hundred. The student is, therefore, well supplied with suggestions for further study if he so desires. The frontispiece is a copy of a drawing by Seuse (Suso) representing symbolically the going forth of the soul and its return to God. A study of this picture is worth many tomes for the understanding of mediæval mysticism in its Christian form.

H. N. GARDINER.

SMITH COLLEGE.

Leibniz, erkenntnistheoretischer Realist. Grundlinien seiner Erkenntnislehre. Von BERNHARD JANSEN. Berlin, Verlag von Leonhard Simion Nf., 1920.—pp. x, 80.

It is the declared purpose of the author of this instructive monograph on Leibniz's philosophy to base his exposition wholly on historical material, without any endeavor to prove a special thesis by judicial selection from that material (p. v). His conclusion is that "Leibniz's philosophy is the synthesis of an Aristotelian-Scholastic and teleologically directed metaphysics, and a modern, mechanical-mathematical-rationalistic mode of thought" (p. 76). Thinkers like Dr. Cassirer have been led astray in their interpretation of Leibniz, Herr Jansen holds, because they have not sufficiently recognized the influence of the first element in this synthesis. And Mr. Russell and Couturat have simply neglected this element altogether, and instead have placed a wholly unwarranted emphasis on the formalistic element of Leibniz's thought (pp. 55, 18ff). "All of Leibniz's greater works are in their widest extent devoted to metaphysical questions" (p. 4), and (quoting Kabitz), "'Leibniz's logic rests upon metaphysical presuppositions, and is permeated with metaphysical ideas'" (p. 16).

Now there are indeed idealistic elements to be found in all the detailed applications of Leibniz's fundamental principles to particular problems, but the author is nevertheless convinced that these principles themselves are essentially realistic in spirit and import (pp. 24–25). "Before all else he insists that things are the ground of logical truth, that the external world exists apart from our knowledge of it and determines that knowledge, that our ideas correspond to things and express their nature" (p. 37). This implies that Leibniz is not the predecessor of Kant that some authorities would have us to believe, but that rather these two thinkers are often opposed in spirit (Chap. VI).

Several difficulties stand in the way of this realistic interpretation. Namely, Leibniz's account of the origin of knowledge; his idealistic condemnation, as appearance, of extension and matter, of space and time; his rationalism; and

finally his conception of the close relation of mathematics to philosophy. These difficulties the author considers in the seventh and eighth chapters of his book, and there disposes of them all, at least to his own satisfaction. Yet he is careful to point out that the fragmentary nature of Leibniz's writings leaves much of his work incomplete and any particular interpretation therefore open to dispute.

The numerous references to other works on Leibniz, as well as to that philosopher's own writings, makes this monograph a welcome addition to the already large list of books on the same subject.

H. R. SMART.

UNIVERSITY OF NORTH CAROLINA.

Kant: seine Anhänger und seine Gegner. Von ROBERT REININGER. (Geschichte der Philosophie in Einzeldarstellungen, Band 27–28.) München, Ernst Reinhardt, 1923.—pp. 313.

Although there is no dearth of good books on the philosophy of the great criticist of Königsberg, this new contribution by Professor Reininger of the University of Vienna will receive a warm welcome. Based as it is upon a comprehensive knowledge of Kant's writings and his philosophical development, and inspired by the scholar's gift of sympathetic interpretation, it does not exaggerate the inconsistencies in the doctrine, which are easily enough discovered, but seeks to explain them in the light of Kant's basal thought. The only question is, as the author points out, whether they are inseparable from the fundamental standpoint of the critical philosophy, or whether they are merely the result of Kant's imperfect development of this philosophy. "It will be the duty of every honest presentation to recognize them; the business of a fruitful interpretation, however, to remove them, so far as possible, within the framework of the system" (p. 244). It was not to be expected that the new ideas should be worked out satisfactorily in a single mind, great though its compass and depth might be. But there was marrow in the bones of Kant for centuries to feed on, to use a figure once employed by the poet Schiller. Even today, two hundred years after his birth, the ultimate consequences of his teaching for our conceptions of the world have not yet been drawn, in the opinion of Professor Reininger. "His doctrine, the renewal of which overcame the materialism of the nineteenth century, has the mission to serve as a real *medicina mentis* against the tendencies to prophetic mysticism and occult pseudo-science which are manifesting themselves everywhere at the present day" (p. 297).

Of particular interest and value to the student of Kant is the section "Zur Würdigung Kants" (pp. 244–263); such appreciation and criticism as the author offers is a great help to the understanding of the whole system. The bibliography and the notes at the end of the little volume will also prove useful. Indeed, Professor Reininger has done his work unusually well, and his book is a most creditable member of the series in which it appears.

FRANK THILLY.

CORNELL UNIVERSITY.

The Meaning of Meaning: A Study of the Influence of Language upon Thought and of the Science of Symbolism. By C. K. OGDEN and I. A. RICHARDS, with an Introduction by J. P. Postgate and Supplementary Essays by B. Malinowski and F. G. Crookshank. Published by Harcourt, Brace and Co., New York, 1923.—pp. xxxii, 544.

The present volume contains much interesting material, although the authors have not succeeded in giving their work unity or system. It suffers from a superabundance of quotations and critical references and is more a collection of curiosities of word-magic, word-superstition, equivocations, sophistries, etc., combined with psychological theorizing, than a serious attempt to understand language as a cultural reality. The account given in Ch. II of verbal superstition is decidedly instructive, although it is surely a serious deficiency of philosophical insight to consider Plato in such a context. Ch. III on "Sign-Situations" attempts a simple psychological theory of signs. The authors commence by rejecting "the assumption of the uniqueness of the relation between the mind and its objects," an assumption which seems to the reviewer to be the beginning of wisdom. They attempt "to outline an account of thinking in purely causal terms" and to explain objective reference in terms of organisms and environments quite after the fashion of the American behaviorists or semi-behaviorists. More specifically it is the context to which they appeal. A sign derives its 'meaning' from the experiences with which it has been associated in the past. The authors refer to a dog to whom the dinner gong is a sign. Thanks to past experience of gong-sounds together with savors, etc., "the present gong-sound gets into a peculiar relation to past gongs and savors" (p. 144); and the past hearings of similar sounds, past savorings, longings, etc., constitute the context which somehow gives the present gong-sound its meaning. Now this may well pass for a rough description of what takes place in the case of signs, and yet if one looks into the matter a little more closely it seems that something has been left out, at least as far as *human* interpretation of signs is concerned, and this neglected factor is the element of intellectual activity. There is *belief* even in the case of a sign of this sort, and is not this belief more than a mere revival of ideas derived from past experience. Is there not a forward-looking *act of cognition* or of *judgment* which transcends the naturalistic schema of recurrent contexts? And even if signs and their interpretation were merely passive association, there is, as Husserl has mads clear, a radical difference between signs and expressions.

The chapter on the "Meaning of Philosophers" is one of the most successful in the book in that it demonstrates the hopeless confusion into which contemporary philosophers have fallen with regard to the word 'meaning.' The chapter is salutary reading and suggests the advisability of keeping the technical use of meaning closely connected with the use of words or other 'expressions.' In Ch. IX the "Meaning of Meaning" is finally unfolded and no fewer than sixteen meanings are distinguished. The authors

conclude that "what philosophers and metaphysicians have long regarded as an abstruse and ultimate notion, falling entirely within their peculiar domain . . . has been the subject of detailed study and analysis by various special sciences for over half a century. During the last few years advances of biology and the physiological investigation of memory and heredity have placed the 'meaning' of signs in general beyond doubt and it is here shewn that thought and language are to be treated in the same way" (p. 390). The authors in other words seek to carry through a consistent naturalism. All of the preceding investigations are held to be the first steps of a science of symbolism. This science, together with what is left of logic and grammar, is to include both philosophy of mathematics and metaphysics and is thus to supplement the work of the scientist "at either end of his enquiry." It is also to be significant from the point of view of the æsthetics of literature, and its chief practical importance is to be found in its applications to education and discussion, where it serves to destroy those 'phantoms' due to what the authors have well called 'linguistic refraction.'

The authors are to be commended for having again brought the problem of language to the fore and for having collected such an interesting mass of material. Their book is valuable as a psychologistic and nominalistic parallel to the idealistic treatment given to essentially the same problem by Husserl and Cassirer. Their doctrine of a criticism of language would seem to be sound in principle however much one may object to the way in which they have worked it out.

W. C. SWABEY.

NEW YORK UNIVERSITY.

We have also received the following books:

Sociology and Political Theory. By HARRY ELMER BARNES. New York, Alfred A. Knopf, 1924. — pp. xiii, 260.

Applied Psychology. By BERNARD C. EWER. New York, The Macmillan Company, 1923. — pp. xii, 480.

Dante. By EDMUND G. GARDNER. New York, E. P. Dutton and Company, 1924. — pp. ix, 255.

The Rise of Universities. By CHARLES H. HASKINS. New York, Henry Holt and Company, 1923. — pp. ix, 134.

The Development of Berkeley's Philosophy. By G. A. JOHNSTON. London, Macmillan and Company, 1923. — pp. vii, 400. 8s. 6d. net.

Source Book in the Philosophy of Education. By WILLIAM HEARD KIRKPATRICK. New York, The Macmillan Company, 1923. — pp. viii, 365.

The Psychology of the Atom. By HENRY ASHTON LILBURNE. London, Taunton Brothers, 1924. — pp. 91.

Economics and Ethics. By J. A. R. MARRIOTT. New York, E. P. Dutton and Company, 1923. — pp. x, 293.

Hellenistic Philosophies. By PAUL ELMER MORE. Princeton, Princeton University Press, 1923. — pp. 385.

The Psychology of Reasoning. By EUGENIO RIGNANO. Translated by Winifred A. Holl. New York, Harcourt, Brace and Company; London, Kegan Paul, Trench, Trubner and Company, 1923. — pp. viii, 395.

Scientific Method. By A. D. RITCHIE. New York, Harcourt, Brace and Company; London, Kegan Paul, Trench, Trubner and Company, 1923. — pp. viii, 204.

Scepticism and Animal Faith. By GEORGE SANTAYANA. New York, Charles Scribner's Sons, 1923. — pp. xii, 314.

Human Value. By HENRY STUART. Cambridge, The University Press, 1923. — pp. ix, 138.

Issues and Tendencies in Contemporary Philosophy. UNIVERSITY OF CALIFORNIA PUBLICATIONS IN PHILOSOPHY. Berkeley, University of California Press, 1923. — pp. 224.

A Critical Examination of Psycho-Analysis. By A. WOHLGEMUTH. New York, The Macmillan Company, 1923. — pp. 250.

La Psychanalyse. By CH. BLONDEL. Paris, Félix Alcan, 1924. — pp. xiii, 251.

Spinoza et ses Contemporains. By LÉON BRUNSCHVICG. Paris, Félix Alcan, 1923. — pp. ii, 496.

Pour une Science de l'Individuel. By JACQUES CHEVALIER. Paris, Félix Alcan, 1923. — pp. 31.

La Mécanique Nouvelle. By HENRI POINCARÉ. Paris, Gauthier-Villars et Cie., 1924. — pp. xvi, 83.

Toleranz und Offenbarung. By JOHANNES KUHN. Leipzig, Felix Meiner, 1923. — pp. xvi, 473.

Introduzione allo Studio del Diritto Penale. By GIULIO BATTAGLINI. Milano, Società Editrice "Vita e Pensiero," 1923. — pp. 115.

La Composizione della Famiglia secondo le Schede di Censimento dell'Egitto Romano. By ARISTIDE CALDERINI. Milano, Soc. Edit. "Vita e Pensiero," 1923. — pp. 61.

Rivelazione e Filosofia. By MARIANO CORDOVANI. Milano, Soc. Edit. "Vita e Pensiero," 1923. — pp. 127.

Principii Naturali di Economia Politica. By N. R. D'ALFONSO. Roma, Athenaeum, 1923. — pp. viii, 119.

S. Tommaso d'Aquino. By AGOSTINO GEMELLI, and others. Milano, Soc. Edit. "Vita e Pensiero," 1923. — pp. 317.

L'Anima di San Tommaso. By FRANCESCO OLGIATI. Milano, Soc. Edit. "Vita e Pensiero," 1923. — pp. 149.

La Gnoseologia dell'Atto come Fondamento della Filosofia dell'Essere. By GIUSEPPE ZAMBONI. Milano, Soc. Edit. "Vita e Pensiero," 1923. — pp. 159.

NOTES.

We give below a list of articles in current philosophical journals:

THE JOURNAL OF RELIGION, IV, 1: *Charles W. Gilkey*, Religion Among American Students; *Robert L. Kelly*, Tendencies in Theological Education in America; *Johann Hempel*, God and the World in the Religious Faith of Jeremiah; *J. M. Powis Smith*, The Church and Education; *Wendell M. Thomas, Jr.*, The Truth of Mysticism; *Lewis Hodous*, The Chinese Church of the Five Religions; *John W. Buckham*, The Christian Platonism of Dean Inge.

THE INTERNATIONAL JOURNAL OF ETHICS, XXXIV, 2: *D. Borden-Turner*, International Relations and the League of Nations; *John H. Wigmore*, The League of Nations from a Lawyer's Point of View; *J. M. Butler*, The League in the Development of Political Institutions; *Roth Williams*, The Technique of the League of Nations; *A. Hammarskjöld*, The Place of the Permanent Court of International Justice within the System of the League of Nations; *B. H. Sumner*, The Aims and Working of the International Labor Organization; *Daniel S. Robinson*, A Critique of Meliorism.

THE HIBBERT JOURNAL, XXII, 2: *The Editor*, An Alternative to Government by Talk; *J. D. Morgan*, The Ethics of Engineering; (*Mrs.*) *C. E. Couling*, The Oldest Thought and the Newest: or Taoism in Modern Dress; *Heinrich Weinel*, The Present State of Religious Life in Germany and its Most Important Tendencies; *Arthur Newsholme*, The Moral Aspects of Social Hygiene; *E. V. Lindsay* and *A. D. Lindsay*, The Conscious Limitation of the Birth-Rate; *Edmond Holmes*, Spiritual Evolution as a Gospel of Salvation and a Principle of Conduct; *Clough W. Ellis* and *Amabel W. Ellis*, An Architectural Revival? *Archibald Duff*, The Spiritual Legacy of Egypt to Us; *James Collier*, A Cardinal of the Renaissance; *Carleton W. Stanley*, Spiritual Conditions in Canada.

THE JOURNAL OF PHILOSOPHY, XX, 26: *Wendell T. Bush*, The Background of Instrumentalism. XXI, 1: *Lawrence K. Frank*, The Development of Science. 2: *Benjamin Ives Gilman*, The Design Argument Survives Darwinism; *Herbert W. Schneider*, Faith. 3: *Charles H. Toll*, The Relativity of Any Analysis; *Herbert E. Cory*, Usefulness, Goodness, and Beauty.

MIND, XXXIII, 129: *Jaroslav Cisar*, Space and Time: An Essay in the Foundations of Physics; *H. H. Price*, Reality and Sensible Appearance; *P. Leon*, Suggestions from Aesthetics for the Metaphysic of Quality (II).

THE MONIST, XXXIV, 1: *J. Alexander Gunn*, Ribot and His Contribution to Psychology; *Harry E. Barnes*, Theories of the Origin of the State in Classical Political Philosophy; *R. D. Carmichael*, The Structure of Exact Thought; *J. M. Thorburn*, Analytic Psychology and Religious Sym-

bolism; *W. B. Mahan*, The Right and the Good in Theory and Practice; *John J. Birch*, A-Priorism and Empiricism; *Oliver L. Reiser*, Life as a Form of Chemical Behavior.

THE NEW PHILOSOPHY, XXVI, 4: *Swedenborg*, The Government of Bees; Philosopher's Note Book; The Brain.

THE AUSTRALASIAN JOURNAL OF PSYCHOLOGY AND PHILOSOPHY, I, 4: *B. Muscio, W. Anderson*, and *W. R. Boyce-Gibson*, Symposium—The Meaning of Philosophy; *E. V. Miller*, The Emergence of Relativity in Mr. Whitehead's Philosophy; *Norbert Wiener*, On the Nature of Mathematical Thinking; *A. B. Fitt*, Experimental Studies of Attention; *N. J. Cocks*, Psycho-Analysis and Religion; *H. Tasman Lovell*, The Tasmanian Mental Deficiency Act.

THE PERSONALIST, V, 1: *Mary W. Calkins*, A Personal Idealist's Concern for Psychology; *Mary S. Leitch*, Sonnet; *Cluade G. Beardslee*, Personalism and Behaviorism; *Robert M. Garett*, Marjorie Pickthall; *Josephine Hammond*, The Quillurgence of Shaw; *Agnes Cornell*, Acceptance, verse; *J. E. Turner*, The Place of Thought in Poetry.

PSYCHOLOGICAL BULLETIN, XX, 12: *B. T. Baldwin*, General Review; Mental Development of Children; *J. R. Kantor* and *H. C. Warren*, The Organismic vs. the Mentalistic Attitude Toward the Nervous System. XXI, 1: Abstracts of the Periodical Literature.

PSYCHOLOGICAL REVIEW, XXXI, 1: *Walter S. Hunter*, The Problem of Consciousness; *Albert P. Weiss*, Behaviorism and Behavior; *Oliver L. Reiser*, The Structure of Thought; *Max Freyd*, Introverts and Extroverts.

JOURNAL OF EXPERIMENTAL PSYCHOLOGY, VII, 1: *H. M. Johnson*, Speed, Accuracy and Constancy of Response to Visual Stimuli as Related to the Distribution of Brightness over the Visual Field; *Herbert R. Laslett*, An Experiment on the Effects of Loss of Sleep; *F. L. Wells*, Vocal and Manual Mechanisms in Choice Reactions; *A. T. Poffenberger* and *Florence L. Carpenter*, Character Traits in School Success; *Herbert A. Toops*, Calculating the Standard Deviation by Plotting and Without Grouping the Raw Measures.

THE AMERICAN JOURNAL OF PSYCHOLOGY, XXXV, 1: *J. L. Mursell*, The Principle of Integration in Objective Psychology; *W. M. Horton*, The Origin and Psychological Function of Religion According to Pierre Janet; *A. C. Reid*, The Effect of Varied Instruction on the Perception of Lifted Weights; *E. G. Boring*, Is there a Generalized Psychometric Function? *G. M. Michaels*, Color Preference According to Age; *T. D. Cutsforth*, Synaesthesia in the Process of Reasoning; *F. Angell*, Notes on the Horizon Illusion: I; *A. A. Roback*, A Supplement to "Behaviorism and Psychology."

BULLETIN DE LA SOCIÉTÉ FRANÇAISE DE PHILOSOPHIE, XXIII, 2: *M. Lévy-Bruhl*, La Mentalité Primitive.

REVUE DE MÉTAPHYSIQUE ET DE MORALE, XXX, 4: *G. Gentile*, Art et Religion; *O. Hamelin*, La Morale d'Aristote; *E. Forti*, La psychologie

Bergsonienne et les survivances actuelles de l'associationisme; *A. Reymond*, Le "Cogito": Vérification d'une hypothèse métaphysique.

REVUE PHILOSOPHIQUE, XLIX, 1–2: *L. Brunschvicg*, Pascal savant; *H. Delacroix*, Les conditions psychologiques du langage; *E. Richard-Foy*, Einstein et sa conception d'un espace fini; *L. Basso*, La problème de la vulgarisation scientifique.

LEVANA, II, 5: *G. Gentile*, Lo spirito informatore della mia riforma; *A. C. Jemolo*, Ancora sull' insegnamento religioso nella Scuola popolare; *U. Spirito*, Il pensiero pedagogico di Gaetano Filangeri (II); *M. Casotti*, Educazione femminile e Liceo femminile.

KANT BICENTENARY.

The University and City of Koenigsberg will celebrate the 200th anniversary of the birth of Immanuel Kant on April 22d. Beginning with April 19th and continuing through April 23d, a series of assemblies are scheduled. In the several programs are included addresses by leading German scholars. On Tuesday, the 22d, the Rector of the University of Koenigsberg will welcome the guests in the City Theater. The principal address will be given by the Professor of Philosophy of Koenigsberg, Dr. Goedeckemeyer. Then will follow the traditional "Bohnenmahl," given by the Society of the Friends of Kant, a social dinner that has been celebrated on April 22d each year since 1805. The ceremonies of the day will be concluded by the presentation of Beethoven's *Fidelio* in the Stadttheater.

Dr. E. L. Schaub, Professor of Philosophy in Northwestern University, has been designated to represent Northwestern University, Cornell University, and the Western Division of the American Philosophical Association at the Kant celebration.

Longmans, Green and Co.'s Publications

PRESENT PHILOSOPHICAL TENDENCIES

By RALPH BARTON PERRY, Professor of Philosophy in Harvard University. *Third Edition.* 8vo. $3.50 *net.*

"A very stimulating and suggestive criticism of the philosophical teachings now most under discussion in the academic world. . . . We wish to call attention to it as a book that every serious reader of current philosophical literature ought to become familiar with."—*Educational Review.*

MEMORIES AND STUDIES

By WILLIAM JAMES. 8vo. $1.75 *net.*

"We can see from this refreshing and stimulating book just wherein the personality of a man like James is different from that of the academic philosopher, and why therefore his philosophy, if it is less complete, less synthetised, moves us more as an utterance of truth."—*English Review.*

MYSTICISM AND LOGIC AND OTHER ESSAYS

By the Hon. BERTRAND RUSSELL, M.A., F.R.S., late Fellow of Trinity College, Cambridge. 8vo. *Fourth Impression.* $3.00 *net.*

"The philosophical studies which occupy the greater part of the book contain some of Mr. Russell's best work, and are all eminently readable."—*Cambridge Magazine.*

"It is a rare pleasure to find philosophical and scientific problems handled with such admirable literary skill."—*Westminster Gazette.*

A STUDY IN THE PHILOSOPHY OF BERGSON

By GUSTAVUS WATTS CUNNINGHAM, PH.D., Professor of Philosophy, Middlebury College. Crown 8vo. $1.25 *net.*

ARISTODEMOCRACY: From the Great War Back to Moses, Christ and Plato

By SIR CHARLES WALSTON (WALDSTEIN), LITT.D., Fellow and Lecturer of King's College, Cambridge; late Reader in Classical Archæology and Slade Professor of Fine Art, Cambridge. *Third Edition.* 8vo. $2.50 *net.*

"Aristodemocracy is so remarkable a production of this war and its philosophy that no one can have a fair idea of English thought at this momentous period without taking its existence and its tenets into account."—*Field* (London)

PATRIOTISM, NATIONAL AND INTERNATIONAL: An Essay

By SIR CHARLES WALSTON (WALDSTEIN). Crown 8vo. $1.00 *net.*

"We must revise our conception of Patriotism as a great social virtue, eliminating what is false and vicious, and preserving, enlarging and strengthening its vitality as a passion which makes for higher wings, until International Patriotism is effectively established among us. This is the immediate aim of this book."—*From Preface.*

EPISTEMOLOGY, OR THE THEORY OF KNOWLEDGE: An Introduction to General Metaphysics

By Rev. PETER COFFEY, PH.D., (Louvain), Professor of Logic and Metaphysics, Maynooth College, Ireland; Author of "Ontology," etc., etc. In 2 vols. 8vo.

Vol. I: The Nature of the Inquiry—Intellectual Knowledge: Judgment—Intellectual Knowledge: Conception. $4.50 *net.*

Vol. II: The Data of Intellectual Knowledge: Sense Perception—Truth and Certitude: Their Criteria and Motives. $4.50 *net.*

THE CHRISTIAN ETHIC OF WAR

By the REV. P. T. FORSYTH, M.A., D.D., Principal of Hackney College. 8vo. $2.00 *net*

"'The Christian Ethic of War' is the work of a devout Christian and a deep thinker. It is a masterly exposition of a great theme, and places the moral issue of the present war on a lofty and inspiring plane."—*Daily Telegraph.*

Longmans, Green and Co. New York